

LONG-RANGE INTERPRETIVE PLAN

Dry Tortugas National Park

2003

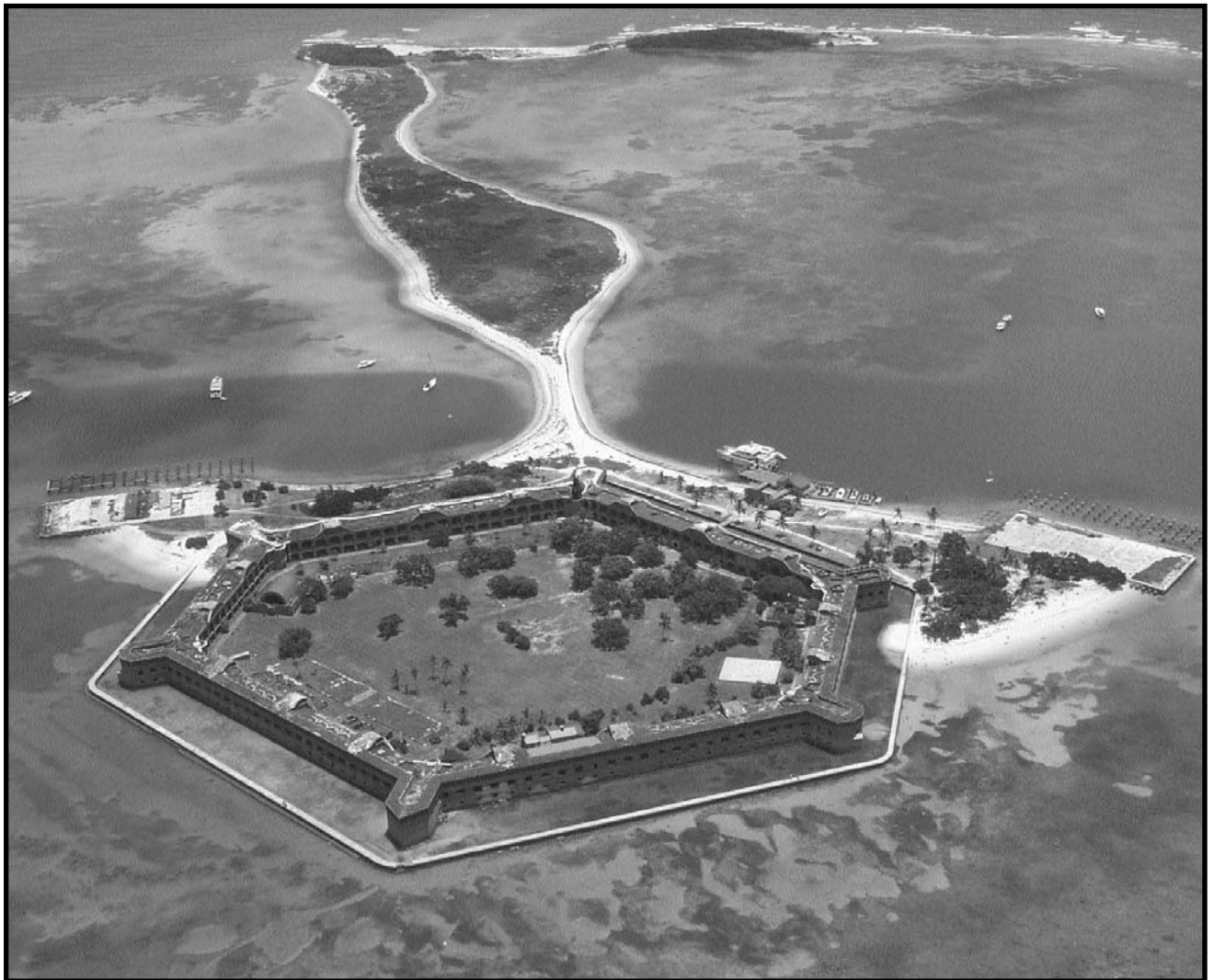


Cover Photograph: Aerial view of Fort Jefferson on Garden Key (foreground) and Bush Key (background).

COMPREHENSIVE INTERPRETIVE PLAN

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Prepared by:
Department of Interpretive Planning
Harpers Ferry Design Center

and the
Interpretive Staff of
Dry Tortugas National Park and
Everglades National Park

INTRODUCTION

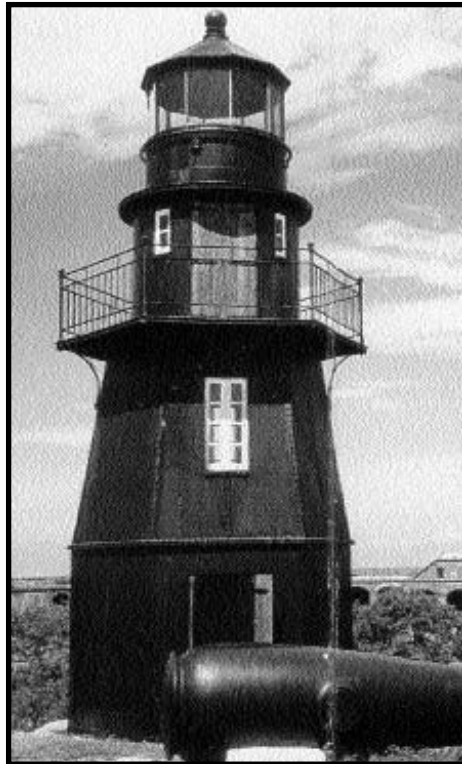
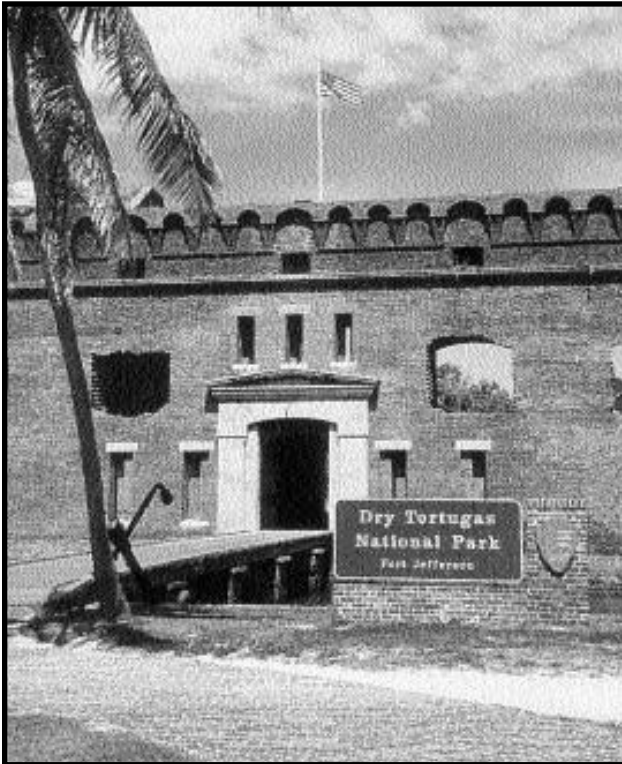
About 70 miles west of Key West, Florida, lies a string of seven islands called the Dry Tortugas. These sand and coral reef islands, or keys, along with 100 square miles of shallow waters and shoals that surround them, make up Dry Tortugas National Park. Here, clear views of water and sky extend to the horizon, broken only by an occasional island. Below and above the horizon line are natural and historical treasures that continue to beckon and amaze those visitors who venture here.

Warm, clear, shallow, and well-lit waters around these tropical islands provide ideal conditions for coral reefs. Tiny, primitive animals called polyps live in colonies under these waters and form skeletons from calcium carbonate which, over centuries, create coral reefs. These reef ecosystems support a wealth of marine life such as sea anemones, sea fans, lobsters, and many other animal and plant species. Throughout these fragile habitats, colorful fishes swim, feed, court, and thrive.

Sea turtles—once so numerous they inspired Spanish explorer Ponce de León to name these islands “Las Tortugas” in 1513—still live in these waters. Loggerhead and Green sea turtles crawl onto sand beaches here to lay hundreds of eggs. Birds nest on these islands, too. Each year some 100,000 sooty terns gather on Bush Key to nest along with about 2,500 brown noddies. Above all this, Frigate birds soar and migratory birds fly over the Dry Tortugas—an important stopover point along the principal flyway between North America and South America.

Evidence of human history abounds here, too. After Ponce de León named the islands for their plentiful sea turtles, later mariners marked them as the “Dry” Tortugas since they held no fresh water. Lighthouses were built here in 1825, 1856, and 1876 to warn sailors; even so, dozens of shipwrecks attest to this area’s underwater dangers. In 1846, the United States started to build Fort Jefferson—North America’s largest fully casemated fort—on Garden Key. By the early 1860s, Fort Jefferson was fulfilling its intended role of protecting U.S. ships passing through the Straits of Florida. Confronted by enormous obstacles, workers struggled for nearly 30 years to build this island fortress. Outmoded and never completed, however, the fort was abandoned by the Army in 1874. President Theodore Roosevelt declared these islands “Dry Tortugas Keys Reservation” in 1908. In 1935, President Franklin D. Roosevelt created Fort Jefferson National Monument; this National Park Service unit was enlarged and designated Dry Tortugas National Park in 1992.

Since 1935, the NPS has protected the park while allowing visitors to enjoy its resources. This Long-Range Interpretive Plan (LRIP) will help the park staff meet this challenge of balancing resource protection with visitor use by reaffirming the foundations of the park’s interpretive efforts, describing its current interpretive program, and recommending interpretive goals that can be achieved over the next seven to ten years.



At Dry Tortugas National Park, loggerhead and green sea turtles (below, right) lay their eggs on many of the park's sand beaches, and sooty terns (right) nest on Bush Key. Fort Jefferson (above) dominates Garden Key, with its lighthouse (above, right). Underwater, coral reefs (below) support smallmouth grunts (below, right corner) and dozens of other marine animal species.



LONG RANGE INTERPRETIVE PLAN

Within the National Park Service planning hierarchy, a park's General Management Plan (GMP) guides park management decisions over a period of about 20 years. In the case of Dry Tortugas National Park, the guiding document is a GMP Amendment, approved in 2001. A park's Comprehensive Interpretive Plan (CIP) is one of a handful of strategic plans that describes implementation of specific aspects of the GMP Amendment. The Long-Range Interpretive Plan (LRIP) is the keystone of the CIP planning process, remaining in place for 5 to 10 years. It is supported by two dynamic components — the Annual Implementation Plan (AIP) and an Interpretive Database (ID); both of these components of the CIP planning process are updated annually by park staff.

This LRIP for Dry Tortugas NP was created in 2002 with input from a variety of park partners during a workshop in Key West, Florida in December 2001 and a workshop with media specialists in Harpers Ferry, West Virginia in February 2002. The LRIP describes the park's interpretive themes and visitor experience goals and recommends ways to achieve those goals through interpretive media, education programs, and personal services. **The LRIP's recommendations are projected over the next seven to ten years. These actions are dependent, of course, on the timely receipt of funds and the ability of the park's many partners to support them.** This LRIP is a guide for park management to reach the "ideal future vision" for interpretive services and media for visitors to Dry Tortugas National Park.

EXECUTIVE SUMMARY

Dry Tortugas National Park (NP)—located at the extreme southwestern tip of the Florida Keys—is administered by the National Park Service (NPS) from the headquarters of Everglades NP in Homestead, Florida.

The NPS has managed Fort Jefferson on Garden Key in the Dry Tortugas since Fort Jefferson National Monument was established by Congress in 1935. In 1992, Congress redesignated this area Dry Tortugas National Park. The park's resources are primarily underwater: within its authorized boundary of 64,700 acres, approximately 97 acres comprise the seven islands known as the Dry Tortugas. The park is surrounded by the Florida Keys National Marine Sanctuary; the U.S. Coast Guard maintains the Loggerhead Key Light. The 2003 organizational chart at Dry Tortugas NP includes two interpretive park rangers, four protection park rangers, five maintenance personnel, one administrative assistant, and one site supervisor. An exhibits specialist and natural resources specialist are also on the park staff, though not duty-stationed at the park. A management assistant, assigned exclusively to Dry Tortugas NP, is on the staff of the superintendent of Everglades NP.

This Long-Range Interpretive Plan (LRIP) was created through a goal-driven process that describes desired visitor experiences and recommends appropriate means to achieve them while preserving the park's natural and cultural resources. The LRIP's first section, on pages 1-49, confirms the foundations of the park and its second section, starting on page 51, recommends actions to be taken over the next 7 to 10 years to upgrade the park's personal services program and interpretive media.

The LRIP's "Future Interpretive Program" emphasizes:

Personal Services:

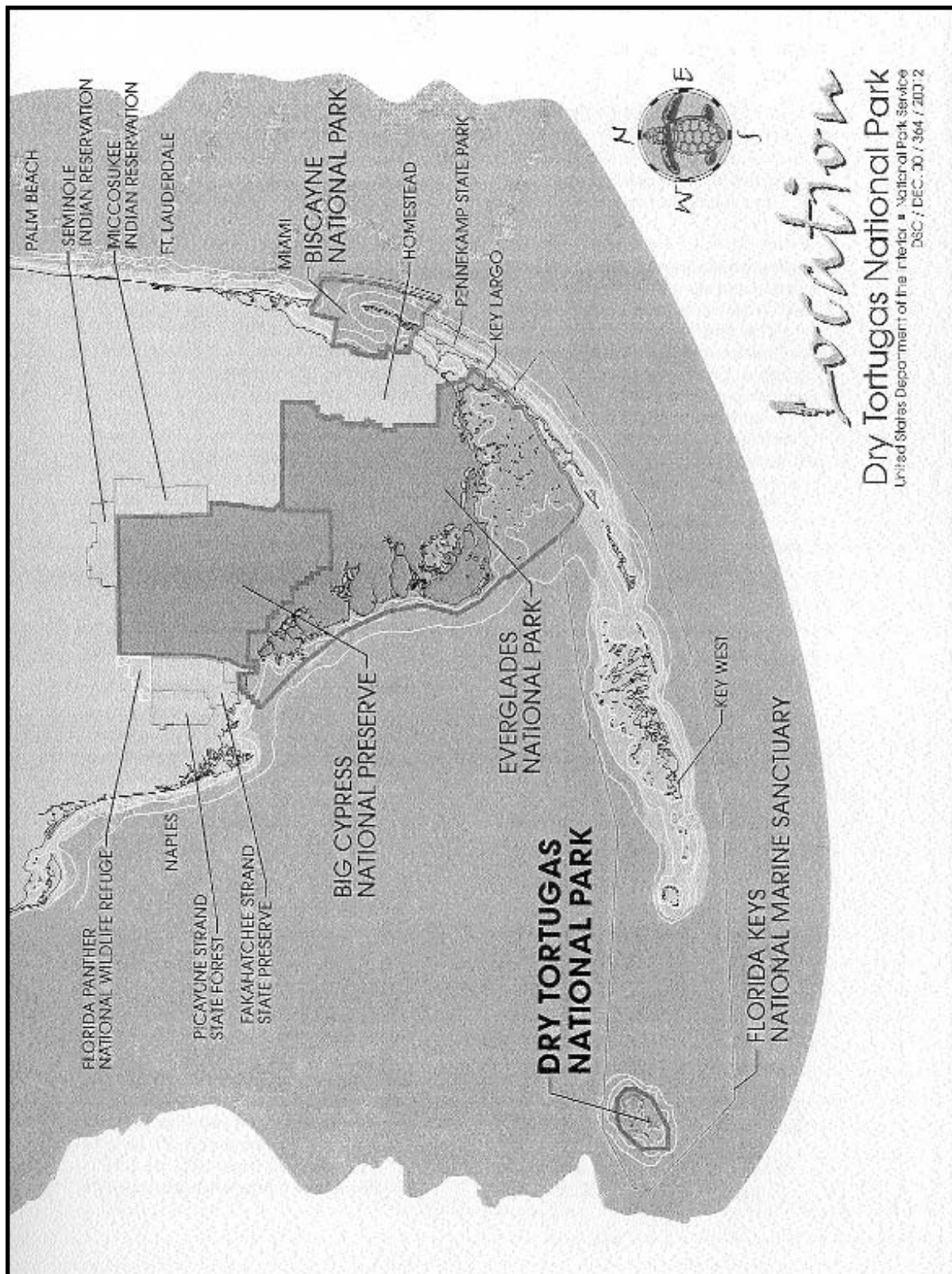
- * Add Interpretive staff to allow regularly scheduled programs/services
- * Initiate a training, certification, and audit program for all ferry concession-provided interpretive services
- * Develop an education program and a distance learning program

Non-Personal Services (Interpretive Media)

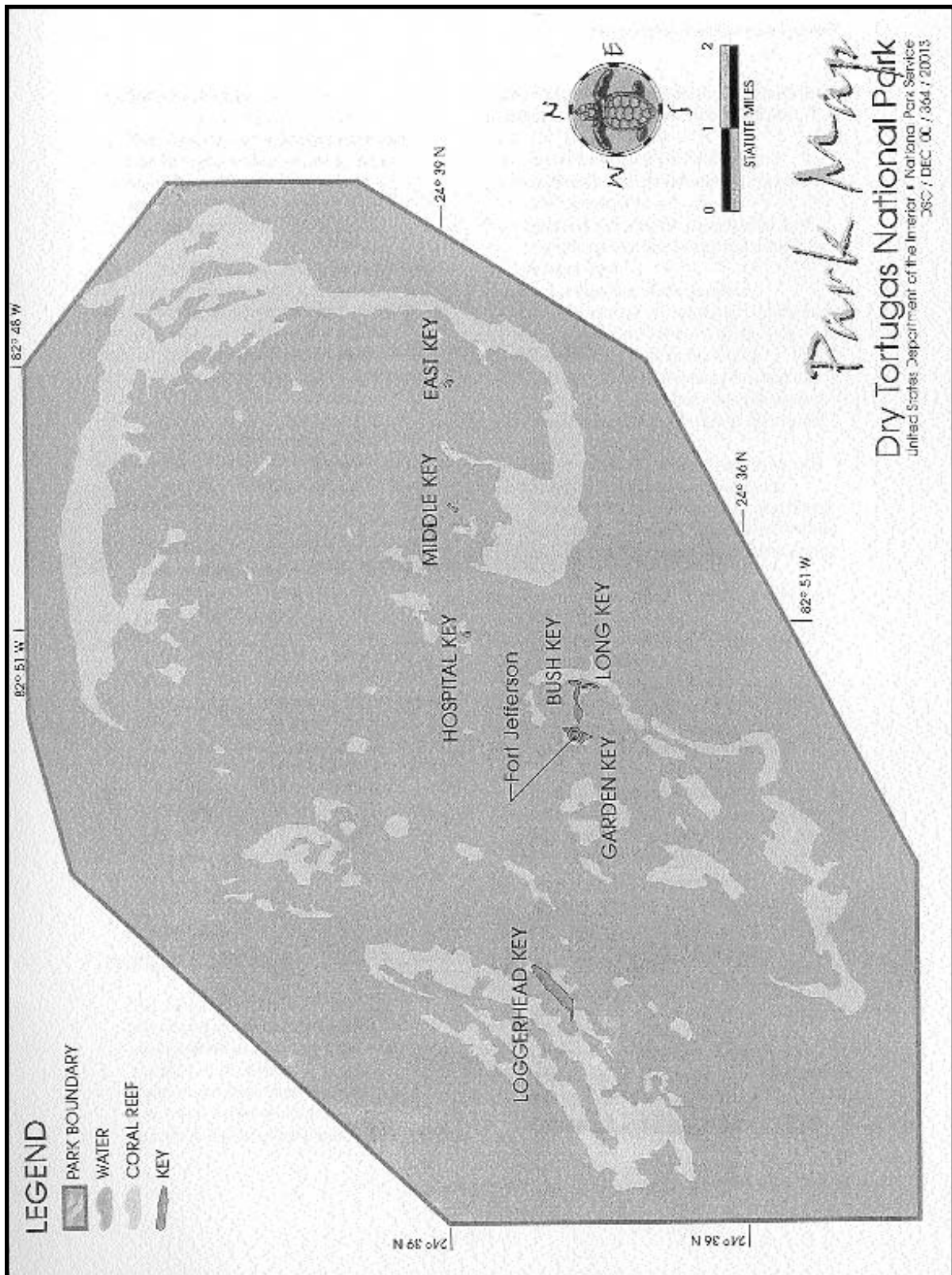
- * Develop a variety of publications ranging from rack cards to sales items
- * Plan, design, produce wayside exhibits for Dry Tortugas and Key West
- * Plan, design, produce indoor exhibits for Key West VC & Fort Jeff VC
- * Plan, design, produce historically furnished areas at Fort Jefferson
- * Develop a park film for Key West VC and other audiovisual programs
- * Develop an audio tour and video for all concession service providers

As stated on the previous page, the achievement of the LRIP recommendations are based on funding and coordination with park partners.

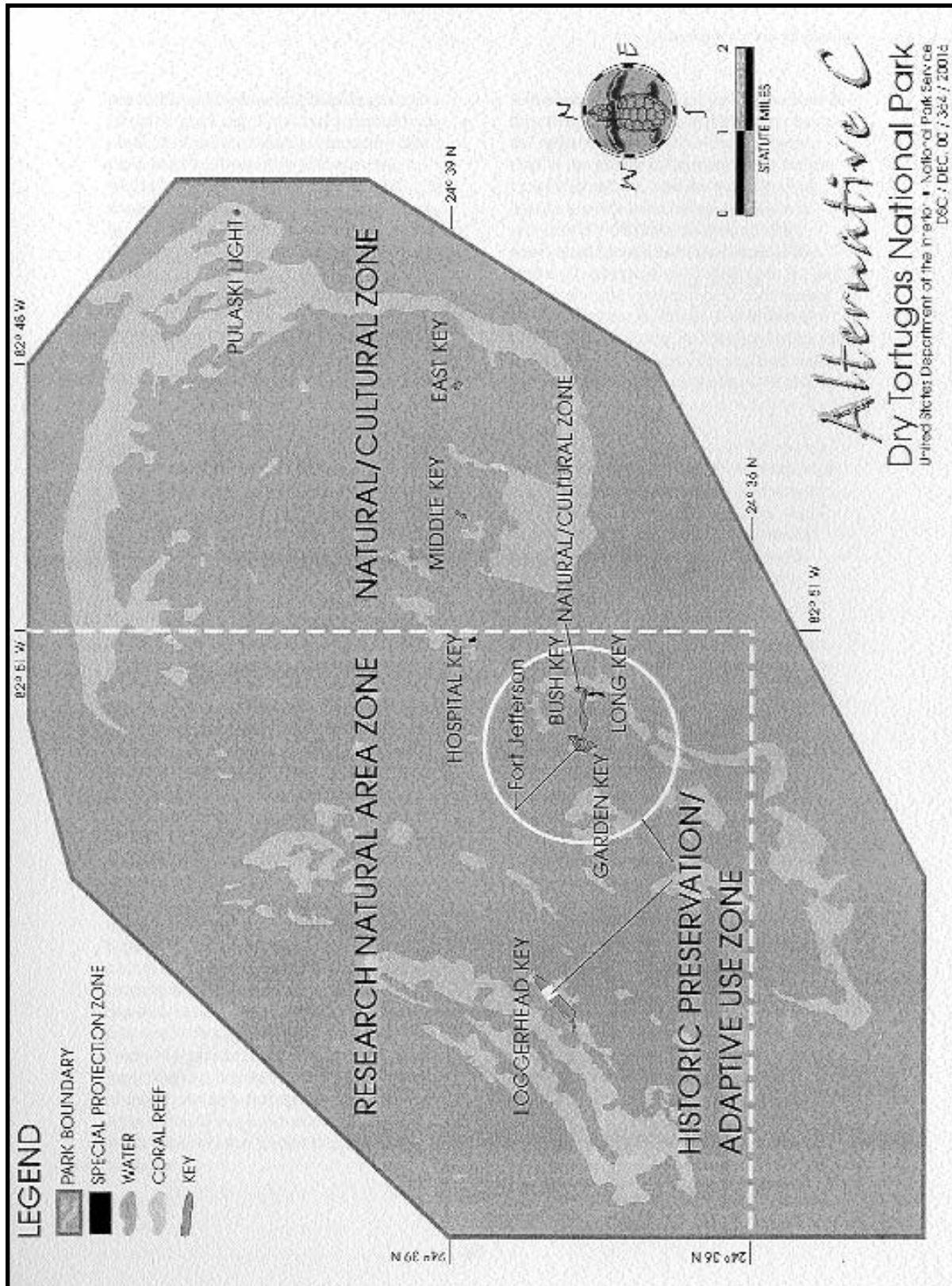
PARK'S LOCATION IN SOUTH FLORIDA



DRY TORTUGAS NATIONAL PARK



GMP ALTERNATIVE C (PREFERRED)



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FOUNDATION

FOUNDATION: ENABLING LEGISLATION

198 STAT. 8418

PUBLIC LAW 100-585—OCT. 28, 1982

Public Law 102-525
102d Congress

TITLE II.—DRY TORTUGAS NATIONAL PARK

Florida

SEC. 101. ESTABLISHMENT OF DRY TORTUGAS NATIONAL PARK.

16 USC 4101-4102

(a) **IN GENERAL.**—In order to preserve and protect for the education, inspiration, and enjoyment of present and future generations nationally significant natural, historic, scenic, scientific, and scientific values in South Florida, there is hereby established the Dry Tortugas National Park (hereinafter in this title referred to as the "park").

(b) **AREA INCLUDED.**—The park shall consist of the lands, waters, and interests therein generally depicted on the map entitled "Boundary Map, Fort Jefferson National Monument", numbered 376-80,000, and dated April 1980 (which is the map referenced by section 201 of Public Law 96-387). The map shall be on file and available for public inspection in the office of the National Park Service, Department of the Interior.

16 USC 4102.

(c) **ACQUISITION OF MONUMENT.**—The Fort Jefferson National Monument is hereby abolished.

16 USC 4103-4104

SEC. 102. ADMINISTRATION.

(a) **IN GENERAL.**—The Secretary shall administer the park in accordance with this title and with the provisions of law generally applicable to units of the national park system, including the Act entitled "An Act to establish a National Park Service, and for other purposes", approved August 25, 1916 (39 Stat. 535; 16 USC 1-3, 5, and 6).

(b) **MANAGEMENT PURPOSES.**—The park shall be managed for the following purposes, among others:

(1) To protect and interpret a pristine subtropical marine ecosystem, including an intact coral reef community.

(2) To protect populations of fish and wildlife, including (but not limited to) loggerheads and green sea turtles, rocky shore birds, frigate birds, and numerous migratory bird species.

(3) To protect the pristine natural environment of the Dry Tortugas group of islands.

(4) To protect, stabilize, restore, and interpret Fort Jefferson, an outstanding example of nineteenth century military fortification.

(5) To preserve and protect submerged cultural resources.

(6) In a manner consistent with paragraphs (1) through (5), to provide opportunities for scientific research.

16 USC 4105-4106

SEC. 103. LAND ACQUISITION AND TRANSFER OF PROPERTY.

(a) **IN GENERAL.**—Within the boundaries of the park the Secretary may acquire lands and interests in land by donation or exchange. For the purpose of acquiring property by exchange with the State of Florida, the Secretary may, notwithstanding any other provision of law, exchange those Federal lands which were deleted from the park by the boundary modifications enacted by section 201 of the Act of June 23, 1980 (Public Law 96-387), and which are directly adjacent to lands owned by the State of Florida outside of the park, for lands owned by the State of Florida within the park boundary.

(b) **UNITED STATES COAST GUARD LANDS.**—When all or any substantial portion of lands under the administration of the United States Coast Guard located within the park boundaries, including Loggerhead Key, have been determined by the United States Coast Guard to be excess to its needs, such lands shall be transferred directly to the jurisdiction of the Secretary for the purposes of this title. The United States Coast Guard now reserves the right in such transfer to maintain and utilize the existing lighthouse on Loggerhead Key in a manner consistent with the purposes of the United States Coast Guard and the purposes of this title.

(c) **ADMINISTRATIVE SITE.**—The Secretary is authorized to lease or to acquire, by purchase, donation, or exchange, and to operate, maintain, administrative and support facilities in Key West, Florida, for park administration and to further the purposes of this title.

SEC. 104. AUTHORIZATION OF APPROPRIATIONS.

16 USC 4107-4108

There are hereby authorized to be appropriated such sums as may be necessary to carry out the purposes of this title. Any funds available for the purposes of the monument shall be available for the purposes of the park, and authorizations of funds for the monument shall be available for the park.

FOUNDATION: PURPOSE

Dry Tortugas National Park was established by Public Law 102-525 — as shown on the previous page — on October 26, 1992, “*to preserve and protect for the education, inspiration, and enjoyment of present and future generations nationally significant natural, historic, scenic, marine, and scientific values in South Florida...*” Also within the park’s enabling legislation — and reinforced in the park’s General Management Plan (GMP) Amendment approved in 2001 — it is stated that “*the park shall be managed for the following purposes, among others:*

- (1) To protect and interpret a pristine subtropical marine ecosystem, including an intact coral reef community.*
- (2) To protect populations of fish and wildlife, including (but not limited to) loggerhead and green sea turtles, sooty terns, frigate birds, and numerous migratory bird species.*
- (3) To protect the pristine natural environment of the Dry Tortugas group of islands.*
- (4) To protect, stabilize, restore, and interpret Fort Jefferson, an outstanding example of nineteenth-century masonry fortification.*
- (5) To preserve and protect submerged cultural resources.*
- (6) In a manner consistent with paragraphs (1) through (5), to provide opportunities for scientific research.*

Note: During the LRIP Workshop in December 2001, it was suggested that the “*education, inspiration, and enjoyment*” part of the enabling legislation’s preamble be emphasized by adding a 7th park purpose to read:

- (7) In a manner consistent with paragraphs (1) through (6), to provide opportunities for education, inspiration, and enjoyment of park resources by present and future visitors.*

FOUNDATION: SIGNIFICANCE

In 1998, a planning effort was initiated to amend the General Management Plan (GMP)/ Development Concept Plan/ Environmental Assessment that had been approved for Fort Jefferson National Monument in 1983. After Dry Tortugas National Park was created in 1992, it was recognized that a GMP Amendment was needed to provide overall guidance for the future use of resources and facilities; clarify research and resource management needs, priorities, and strategies; and address changing levels of park visitation and use. During the workshops with park staff, neighbors, and stakeholders that created the GMP Amendment (approved in 2001), the following significance statements were developed.

“Dry Tortugas National Park is a significant unit in the National Park System because it:

... contains historic Fort Jefferson, a militarily and architecturally significant 19th-century fort.

... protects the historic Loggerhead Key lighthouse, and the historic Garden Key harbor light.

... possesses one of the greatest concentration of historically significant shipwrecks in North America, with some vessels dating back to the 1600s.

... maintains one of the most isolated and least-disturbed habitats for endangered and threatened sea turtles in the United States.

... supports the only significant sooty and noddy tern nesting colonies on Bush and Long Keys, and harbors the only U.S. frigate bird nesting colonies on Long Key.

... serves as an important resting spot for migrating birds.

... provides unique opportunities to view tropical seabirds.

... protects the least disturbed portion of the Florida Keys coral reef ecosystem.

... presents outstanding potentials for education, recreation, and scientific research related to the park’s exceptional marine resources.

... offers a sense of quiet and remoteness and peace in a vast expanse of sea and sky.

...affords an opportunity to understand and appreciate a rare combination of natural, historic, marine, and scenic resources.”

FOUNDATION: MISSION GOALS

Given the purpose and significance statements on the previous two pages, mission goals were also developed during the GMP Amendment planning process. Mission goals are broad conceptual descriptions of what the park should be like, based on desired, ideal or future resource conditions and appropriate visitor experiences.

I. All submerged and land-based cultural resources have been identified, documented, protected, and/or stabilized.

** All terrestrial archeological resources have been identified, documented, evaluated, and protected.*

** All submerged cultural resources in 30 feet or less of water have been identified, documented, evaluated, and protected.*

** One example of each type of armament and the hot shot oven at Fort Jefferson has been restored, and all 10 original cannon in the park have been conserved.****

** All historic structures at Dry Tortugas, including Fort Jefferson and the Loggerhead Key lighthouse, have been stabilized.*

** The type and level of public use does not negatively impact cultural resources.*

II. All natural resources and associated values are protected, restored, and maintained in near pristine condition.

** Habitats impacted by humans are restored and the natural environment is suitable for use by sea turtles and migrating birds.*

** Native plants and animals are not impaired by invasive, exotic plants or animals (e.g., rats).****

** The area's physical oceanography (currents, tides, and winds) is understood and is used to manage remote sources of pollutants.*

** The park is internationally recognized as a center for marine research.*

** The type and level of public use does not negatively impact natural resources.*

** Human-caused physical damage to reefs and seagrass meadows is eliminated, and natural populations of fish and marine life are maintained.*

** Management decisions are based on sufficient data, and the park's policies support and enhance the survival of threatened and endangered species.*

NOTE: *** indicates missions goals that were added by the park's Museum Curator in 2003.

Mission Goals (continued)

III. Visitors understand, appreciate, and are inspired by the park's historical and natural resources, and they support the protection of these resources.

** Dry Tortugas provides only minimal visitor services and facilities and requires park visitors to be self-sufficient.*

** The quality of visitor experience is protected by sustaining the park's peaceful and remote character.*

** All visitors, government entities, and other interested parties understand why the park was established and work cooperatively to achieve its purpose and mission.*

** Commercial operators are aware of the park's purpose and convey that to their customers.*

IV. Available park facilities, infrastructure, and services are sufficient to support operational needs, park staff, and visitors, and appropriate recreational opportunities are safe and adequate for visitors and employees.

** Facilities and infrastructure are sufficient to support the park's operations and visitor needs, in conformance with state and federal laws and the park's purposes.*

V. Dry Tortugas National Park is a responsive and efficient organization, and enhances its managerial capabilities through initiatives and support from other agencies, organizations, and individuals.

** Title to Loggerhead Key and submerged lands within the park boundary are transferred to the park, in accordance with the park's enabling legislation.*

** Cooperative relationships are developed to assist in and carry out the park's purpose.*

FOUNDATION: **INTERPRETIVE THEMES**

Tangible/Intangible Concepts

The primary purpose of interpretation is to make an emotional and intellectual connection from the park resources to each visitor's experience/background so that visitors will understand, appreciate, and help preserve the park. The list below (this is not an all-inclusive list) begins to make that connection by comparing the park's tangible resources to the intangible meanings that today's visitors might bring to the park. Park interpreters, ferry employees, and media specialists should use this list as a starting point when developing interpretive services and media to help visitors create meaningful connections and lasting impressions.

Tangible (Resources) Intangible (Meanings)

Marine Resources:

Shipwrecks	Discovery, greed, adventure, exploration
Groundings	Damage/death of corals and other sealife
Coral reefs	Health - of- planet, diversity of life, mystery
Fish	Beauty, food, recreation, commerce
Ocean	Wonder, humbling, immense resource
Aqua blue water	Clarity, calm, sustainable life
Water quality	Wildness, remoteness, natural systems

Island Resources:

Sea turtles	Survival, longevity, return home
Birds	Migration, freedom, mating/nesting
Mosquitoes	Annoyance, fear of disease, food for birds
Vegetation	Vulnerable, tenacious, hardy, competing
Skyscapes	Awe, quiet/loud, remote
Tropical storms	Destruction, fear, natural change

Geology:

Sand	Infiniteness, mobility
Safe harbor	Shelter, sanctuary
Edge of continental shelf	Human smallness, freedom, fear

Cultural Resources:

Fort Jefferson	Protection, nationalism, prison/paradise, isolation, craftsmanship, architecture
Artillery	Power, protection, technology, deterrent
Lighthouses	Warning, danger, loneliness
Carnegie Lab	Knowledge, consequences, appreciation
Rafts, oars, maps	Immigration, danger, freedom
Military records	Organization, obedience, restrictions
Diaries & letters	Family, loneliness, fear, love
Objects from human past	Isolated, struggle, diversity, achievement

Parkwide Theme Statements

As visitors enjoy the resources at Dry Tortugas National Park, it is the responsibility of interpreters to facilitate emotional and intellectual connections—as described on page 7—from the park’s tangible resources to the visitors’ intangible meanings. The tangible/intangible list on page 7 was devised by the staff from Dry Tortugas National Park, some staff from Everglades National Park, and a variety of park stakeholders who met at a workshop in December 2001. This group also developed the theme statements below and on the next page. Each visitor to Dry Tortugas National Park should have the opportunity to be exposed to these themes—ideas central to the park’s story—through the park’s personal services program, interpretive media, or both.

Overarching Theme: *Because of its landforms, location, currents, and weather, Dry Tortugas National Park is a confluence of natural and human influences, which are integral to each other.*

1. Natural History Themes:

A. The Dry Tortugas lie at the convergence of ocean currents resulting in an area teeming with marine life.

This theme statement includes the following park resources:

Coral reef ecosystem	Ocean currents
Seagrass	Pelagic (open sea) life
Fish	Water column
Marine invertebrates	Mangroves
Benthic (sea bottom) community	
Museum collection	

B. The geology and isolated location of the islands offer a vital terrestrial habitat that provides refuge for nesting and migrating wildlife species.

This theme statement includes the following park resources:

Turtles	Vegetation (native, exotic, invasive)
Birds	Geomorphology
Insect life	Exotic rodents

C. The Dry Tortugas is a fragile ecosystem that is influenced by global, regional, and local activities.

This theme statement includes the following park resources:

Coastal processes and unique beachrock
 Oceanography
 Water quality
 Weather
 Endangered/threatened species (and exotics/pests)
 Fisheries
 Boat groundings
 Marine Laboratory/Research
 Night sky/astronomy

Parkwide Theme Statements (continued)

2. Cultural History Themes:

NOTE: The primary themes below are represented within all of the Cultural Theme categories of the revised NPS Thematic Framework.

A. Despite its apparent isolation, the historic structures in Dry Tortugas National Park resulted from evolving national concerns, international rivalries, and pioneering endeavors.

This theme statement includes the following park resources:

Fort Jefferson	Hospital
Coaling docks	Cultural landscapes
Carnegie Lab	Water distillery remains
Artillery	Dredge spoils
Museum collection	

B. Due to its pivotal location and the risks of navigating the Florida Straits, the Dry Tortugas became a focal point for human successes and failures.

This theme statement includes the following park resources:

Loggerhead Light
 Garden Key Light
 Lighthouse support structures
 Navigational aids
 Submerged anchors
 Anchorages
 Windjammer wreck

C. The voices of Dry Tortugas—reflecting a wide range of individuals and cultures—tell a story of survival, adaptation, struggle, interaction, and accomplishment.

This theme statement includes the following park resources:

Shipwrecks
 Museum collection (artifacts, diaries, papers, other historic items)
 Graffiti
 Dr. Mudd's cell
 Quarantine remains
 Theater
 Gardens, trees
 Rock wall on Loggerhead Key
 Submarine cable fragments
 Fort modifications (by NPS and military)

3. Orientation, information, and safety messages

NOTE: While these do not represent primary themes, these messages are key to what should be communicated to all visitors so that they have as safe and as enjoyable a visit as possible.

Interpretive Themes for the Florida Keys Visitor Center planned for Key West, Florida:

Dry Tortugas National Park is participating in planning for an inter-agency visitor center to be located in Key West, Florida. Park staff from Dry Tortugas National Park, Everglades National Park, and a variety of park stakeholders, met at an Interpretive Planning Workshop in June 2001, and developed the theme statements below and on the next page. All partners (NOAA, NPS, USFWS) in the Florida Keys Interagency Visitor Center would provide these messages to the center's visitors through a range of interpretive and educational media and services:

A. The Florida Keys are one of the most biologically and sociologically complex settings in North America.

The mix of mangrove shorelines, seagrass beds, and coral reefs in and around the Florida Keys serve as habitats and breeding areas for much of the marine wildlife found in the Atlantic Ocean and Gulf of Mexico.

The Florida Keys ecosystem supports rich biological communities possessing extensive conservation, recreational, commercial, ecological, historical, research, educational, and esthetic values that give this area special national significance.

The Florida Keys ecosystem is tied to and affected by the greater South Florida ecosystem; habitats are interconnected and interdependent, and influenced by human action.

There is "no other place" in the world like the South Florida ecosystem — water is its lifeblood.

B. The Florida Keys environment is the equivalent of a tropical rainforest.

The biodiversity of the Florida Keys and interconnected natural communities is greater than other Atlantic coral reef environments.

Water is the lifeblood of the Florida Keys.

C. The future of the Florida Keys is perched upon a delicate, ever-shifting balance that, without care, will topple.

The story of human interactions within the Florida Keys ecosystem is one of discovery, adaptation, survival, destruction, and preservation. This story continues today.

The South Florida resources are valuable and fragile. Each of us must take action to maintain this area's biodiversity, endangered species, and habitats for future generations.

The daily activities of people living in South Florida have a direct impact on the living marine resources of the Florida Keys.

Interpretive Themes for the Florida Keys Visitor Center planned for Key West (cont.)

D. Protection of the fragile Florida Keys resources occurs through active management and responsible public use and understanding.

The protected lands and waters in the Florida Keys preserve what is left of the “original keys”—a special tropical paradise.

Three federal agencies work together to manage the Florida Keys resources; individual designations (sanctuary, wildlife refuges, national park) combine as a whole to protect a complex ecosystem.

E. The Florida Keys are a visually stunning, magical world of wildness, tranquility, and wonder to be enjoyed.

The spectacular Florida Keys resources offer images, sounds, and experiences of astonishing scenic beauty and intellectual and emotional stimulation, provocation, and fascination.

Far from the madding crowd are treasures seen only by a few; most visitors to the Florida Keys spend their time in Key West and other tourist areas.

F. The cultural resources of the Florida Keys are unique and non-renewable portals into the area’s colorful past.

The keys have a rich, historical record from forts to shipwrecks, archaeological sites to historic homes.

The cultural roots of the Keys are an amalgam of world cultures.

The story of the Keys is a microcosm of American history--from native life to European exploration and expansion to contemporary immigration.

Both on land and underwater, the cultural heritage of the Keys is a rich resource, preserved for future generations.

G. In addition to the above interpretive themes, staff and interpretive media/programming at the Florida Keys Interagency Visitor Center will provide **orientation and information** about the Florida Keys resource and individual agency missions, and **safety messages** for the visiting public.

FOUNDATION: VISITOR EXPERIENCE

Current Visitor Experience — Summer 2003

Visitors currently travel to Dry Tortugas National Park by commercial boat, private boat, or by seaplane. For the visitors who take a ferry or seaplane, their “visitor experience” starts at the ferry dock or seaplane desk. Two competing ferry vessels each bring up to 100 passengers from Key West to Garden Key daily. Travel time is about 2 1/2 hours each way, and visitors spend about 4 hours on Garden Key. The ferry operators offer some in-transit orientation to visitors. Once docked at Garden Key, the ferry concessioners conduct tours of Fort Jefferson and provide lunch for their passengers at the picnic area. Visitors typically snorkel in the swim area or walk the moat wall after lunch; some find their way back to the visitor center to see exhibits and make purchases in the bookstore. Seaplanes make multiple daily trips from Key West; flying time is about 35 minutes each way. Private boats (owned or rented) are permitted to anchor overnight at the designated park anchorages.

Dry Tortugas National Park’s website and reception staff at Everglades National Park provide basic information about the history, natural and cultural resources, recreational and educational opportunities, and transportation to the park. If a visitor travels to the park by ferry, one ferry operator offers an interpretive message over their “PA” system aboard their boat that expands on this same information. Visitors to Garden Key may take a tour of the fort guided by an NPS interpreter (if available) or by an employee of a ferry boat operator. Also, a self-guiding tour that follows wayside exhibits allows visitors to explore the fort independently. Ranger-led tours and interpretive programs are limited.

Recreational opportunities include swimming, snorkeling, fishing, beachcombing, bird and wildlife watching, photography, camping, kayaking, picnicking, and scuba diving to see coral, fish, and shipwrecks.

Although commercial fishing is prohibited in the park, recreational salt-water fishing is allowed if visitors have a Florida fishing license. Charter fishing boats carrying up to six people are allowed if they receive permits from the NPS. Personal watercraft (PWCs) are prohibited.

There is no food service, freshwater showers, or freshwater drinking fountains for visitors on the islands; visitors must bring their own supplies and must carry all trash with them when they leave the park.

Despite the park’s remote location, its annual visitation increased from 23,266 visitors in 1994 to 95,261 in 2000. The dock, campground, and restrooms are crowded during peak periods because the ferries arrive and depart about the same time each day. Staffing at the park and the facilities have not kept pace with the increase in visitors in recent years.

Desired Visitor Experience

In the future, visitors will continue to travel to the park by commercial ferry or plane or private boat. Sometime in 2004, a concession contract for ferry service will be issued which will result in one daily ferry that will carry up to 150 passengers. Most visitors would be day users and, because of time constraints, Fort Jefferson on Garden Key would likely remain the primary destination site. The GMP Amendment envisions the dispersal of visitor loading on Garden Key with the implementation of a concessions contract that will call for snorkeling excursions to sites away from the island. In addition to snorkeling and tours of the fort, other recreational opportunities at Garden Key would continue to include scuba diving, boating, swimming, camping, fishing from the dock, and wildlife viewing. Visitors would still need to be self-sufficient and provide their own food, water, equipment, and other supplies.

An interagency visitor center would be established in Key West; the agencies participating would be the Florida Keys National Marine Sanctuary, the National Park Service, and the U.S. Fish and Wildlife Service. The visitor center would have general park information and interactive exhibits. It would also give potential visitors previsit information to make their experience more meaningful and help them be better prepared for the trip. The interagency visitor center could serve as a vicarious experience for those who decide not to visit the park.

Because of the park's remote location and sensitive resources—natural and cultural—park visitors must have access to messages on resource protection and park orientation before arrival as well as on-site.

Dry Tortugas National Park offers unique opportunities for cognitive, affective, sensory, and physical experiences for visitors. As such, visitors to Dry Tortugas National Park would be able to:

- * Understand the park's significance and primary interpretive themes.*
- * Experience the essence of the park's wild and remote nature—from wildlife, coral reefs, and scenery to wonder, quiet, and personal inspiration—and begin to fathom its complexity and mystery.*
- * Hear the echoes of the past through the stories the park preserves.*
- * Develop a sense of appreciation and responsibility that will result in actions to protect and support the park and national park system.*
- * Successfully plan their visits and orient themselves to facilities, attractions, features, and experiences.*
- * Behave in ways that do not hurt themselves or park resources.*
- * Enjoy themselves, have memorable experiences, and feel enriched.*
- * Encounter programs, media, and facilities that enhance their educational experiences.*
- * Learn about the fragility of the park and threats to its resources.*

FOUNDATION: **ISSUES AND INFLUENCES**

Servicewide Initiatives

Within its Strategic Plan —mandated by the Government Performance and Results Act —the National Park Service set long-term Mission Goals to be achieved. Among its goals and initiatives, the National Park Service emphasized the following areas of servicewide priorities:

- * Preservation of Natural and Cultural Resources
- * Natural and Cultural Resource Inventories
- * Visitor Safety and Satisfaction with Park Facilities
- * Visitor Understanding & Appreciation of Resources
- * Visitor Demographics
- * Workforce Diversity
- * Employee Competencies Training/Certification
- * Employee Safety
- * Cost-effectiveness
- * Partnerships
 - Community Groups/Non-Profit Organizations
 - Other Government Agencies
 - Corporate Sponsors
 - Academic Institutions
- * Education Outreach
- * Scientific and Historical Research
- * International Assistance

External Influences

External factors (i.e., laws, regulations, policies, trends, and other items outside the park's realm of control) that influence Dry Tortugas National Park management's ability to accomplish its goals include:

- * Coral Reef Protection (Executive Order 13089): Establishes a system of management for coral reef ecosystems in order to preserve and protect their biodiversity, health, heritage, and social and economic value. For the NPS, it establishes a networked monitoring system and research. The park staff at Dry Tortugas NP will interpret the world's coral reefs as a barometer of planetary health, global climate change, water quality, habitat, and on-going coral reef research. (This will help prove the hypothesis that “no-take” zones within Dry Tortugas NP will result in increased fish size and more-successful breeding populations.)

External Influences (continued)

* Endangered Species Act: Several federally listed endangered species are found in the park. These include five species of sea turtle (Loggerhead, Green, Hawksbill, Leatherback, Kemp's Ridley), the West Indian manatee, two species of whales and many species of fish, coral, and birds. Interpretation can weave these stories into various interpretive efforts, including the successes of efforts to protect some species such as brown pelicans. In general, the park staff will interpret habitat preservation and the benefits derived from that, including the protection of threatened and endangered species.

* Migratory Bird Treaty Act (MBTA) (16 U.S.C. 703-712; Chap. 128; July 13, 1918; 40 Stat. 755, as amended): Dry Tortugas is on a major flyway used by birds moving along their traditional migratory routes. Many species stop in areas of high use, such as Garden Key, to rest during their journey. Under this law, it is illegal to possess or harm any migratory bird, as well as to pursue it. Birders can stress these animals further by approaching them. Interpretation will educate visitors—especially birders—to the adverse impacts their enthusiasm can cause migrating birds.

* Marine Protection Act (Executive Order 13158): Establishes an expanded and strengthened comprehensive system of Marine Protected Areas to enhance conservation of natural and cultural elements of the Nation's marine heritage and to allow for an economic and ecological use of these areas to maintain their sustainability. The General Management Plan for the park establishes various park uses in such a way as to abide by the tenets of this Executive Order. Park regulations such as the (future) establishment of the Research Natural Area (RNA)—where only permitted stopping and non-consumptive recreation will be allowed—are examples. The interpretive program will be key in providing public education and awareness of these new regulations.

* National Environmental Policy Act (NEPA): NPS policy and Director's Orders have established a higher standard for NEPA compliance to prevent degradation and impairment of park resources. Everglades National Park and Dry Tortugas National Park have embraced this NPS policy. In planning media and facilities, time and costs of NEPA compliance must be factored into the projects.

* Resource management policies: At the time it is established, the Research Natural Area of Dry Tortugas National Park, combined with Florida Keys National Marine Sanctuary's Tortugas Ecological Reserves, will constitute the largest "no take" marine area in the U.S.

* Universities and Academia: With the park establishing a Research Natural Area, research becomes an important management component. With research comes new information that can quickly make permanent media such as waysides and exhibitry out-of-date or incorrect.

External Influences (continued)

* Everglades Restoration and other external influences: Dry Tortugas NP is a part of the Everglades ecosystem. National influences on the park include nutrients from Mississippi River flooding being identified as far east as Dry Tortugas. Global influences include African dust being carried by tropical winds that may affect the Dry Tortugas' coral reefs.

* Archeological Resources Protection Act (ARPA) (16 U.S.C. 470 et seq): This historic preservation statute applies to both terrestrial and marine environments. ARPA was specifically designed to prevent looting and destruction of archeological resources, including submerged resources. A strong education program needs to be developed so that visitors do not remove artifacts from any site they may visit, including shipwrecks.

* The National Historic Preservation Act of 1966: At Dry Tortugas National Park, 27 park structures are on the National Register of Historic Places, and Loggerhead Key Lighthouse and associated structures have been nominated as a historic district. The park also contains the largest hotshot furnace still standing. The hotshot furnace is believed to be the largest ever built in North America, and is one of only six known surviving shot furnaces on the continent. Because the State Historic Preservation Office (SHPO) has oversight of Section 106 of the National Historic Preservation Act, this office has a great deal of influence on the historic resources found at Dry Tortugas National Park.

* Florida Trust for Historic Preservation: The director of this partner to the State Division of Historical Resources, which is aligned with NPS's national preservation program, also serves as the Florida SHPO.

* Bureau of Citizenship and Immigration Services (BCIS): If U.S. Immigration policies change in this bureau (formerly the INS) within the new Department of Homeland Security, languages and cultural diversity may increase in this region. If the U.S. eventually lifts the current Cuban embargo, it may also have profound impact on park visitation.

* Florida State Tourism: This is a major economic factor with about 1.4 million visitors that annually go to the Florida Keys. If these numbers go up, demands on at Dry Tortugas National Park may go up. Currently, the GMP Amendment does not limit the numbers of private boats in the park, and these numbers may rise as the boats' range increases.

* Boating Technology: The range and speed of boats is rapidly growing, and tools such as GPS (Geographic Positioning System) allow novices to navigate with certainty. With increasing numbers of privately owned boats in Florida, it is logical to anticipate an increasing number of visitors traveling to the park via private vessels. Because the trip can be hazardous due to crossing deeper waters, park staff will need to develop a means to monitor visitation levels and to provide information and education services at points of embarkation.

Resource-based Issues

The resource management specialists at Everglades and Dry Tortugas National Parks address many resource issues. As information becomes available, interpreters can help the public understand these issues:

Natural Resources:

* Park management zones: As outlined in the park's new GMP Amendment, park management zones will be implemented in order to meet park goals and objectives mandated by Congress. One of these park management zones is the Research Natural Area (RNA). Substantially increasing visitation and fishing at Dry Tortugas National Park and associated impacts make the RNA a valuable tool for protecting significant natural features, processes, and populations. Among the RNA's objectives are: to preserve genetic diversity, to protect areas of outstanding resource value against environmental disturbance, to serve as a reference area for the study of ecological succession, and to serve as a control area for comparing results from manipulative research.

One specific and highly-discussed outcome of the RNA is the increase in abundance and size of protected fish populations. Because reef fish stocks, like grouper and snapper, are declining throughout the Florida Keys from over-harvesting, the RNA—along with the Tortugas Ecological Reserve (which is part of the Florida Keys National Marine Sactuary)—will play a significant role in protecting these populations in the park, and subsequently, repopulating these species and others in waters throughout the Florida Keys. In addition to fisheries, hard and soft coral species, some of which are rare elsewhere, will receive the highest level of protection in the RNA and may serve to repopulate waters throughout the Florida Keys.

Visitor use in the RNA will be highly regulated to maintain the greatest levels of resource protection. Access will be granted only through a permit process. Boaters will be required to use mooring buoys; anchoring and consumptive recreation (fishing and spearfishing) will be prohibited. The RNA will offer unparalleled opportunities for public education and interpretation because of the pristine nature of this zone. A sense of remoteness and solitude in a vast expanse of sea and sky is one of the highly-valued experiences awaiting visitors who spend time here.

Effective and adequate interpretation of the purpose and significance of the Dry Tortugas RNA, as well as education about appropriate visitor behaviors while inside the RNA, are critical to its success. The public discussions regarding the RNA in Dry Tortugas National Park have not been without controversy; some view the implementation of this zone as another arbitrary government "closure." Additionally, the "RNA" acronym and related scientific jargon will need to be approached carefully so that all visitors can truly appreciate and comprehend its worth.

Resource-based Issues (continued)

Natural Resources (continued):

* Dynamic resources: All natural resources are dynamic. However, the most pronounced natural processes that impact visitors—from a practical standpoint as well as an interpretive standpoint—are the continually shifting sands of the Dry Tortugas islands. Islands have come and gone throughout the history of the Dry Tortugas. Ponce de León counted 11 islands on his visit to the Dry Tortugas in 1513; currently there are seven. The famous sooty tern colony has not always been on Bush Key; terns relocated there after their historical site, Bird Key, vanished as a result of the 1935 hurricane. Prevailing winds and currents move and redistribute sands, as do tropical storms and hurricanes.

This phenomenon especially affects boaters, who require updates to island and beach changes that affect navigation. Because of recent shifting sands, Garden Key and Bush Key are now connected via a narrow strip of sand. This change is not reflected on recent nautical charts and offers a big surprise to boat operators who try to use this once-popular channel. Stormy weather can immediately change the outline of a Dry Tortugas island. Visitors are able to witness a geological process over the course of just a few days. The opportunities to interpret these astonishing events are worthwhile and accessible .

* Weather and isolation: Since weather plays a key role in the existence of the Dry Tortugas islands, it is logical to conclude that weather also affects the visitor who comes to these islands. Weather conditions in the park are often extreme, from the scorching sun to the high wind gusts and seas associated with sudden squalls and storms. These elements can profoundly affect visitor experience and basic needs, and must be addressed through adequate education. Sunscreen, well-ventilated clothing, and sea-sickness medication should all be part of the Dry Tortugas experience. Visitor education in regard to these basic needs is best addressed before they arrive at the park. The (future) interagency Florida Keys Visitor Center in Key West, the Dry Tortugas NP web page (<http://www.nps.gov/drto/>), and NPS interpretive kiosks at the Key West ferry dock could effectively provide this vital information. Campers, in particular, need this critical information. Campers should monitor weather conditions: If hurricane conditions appear imminent, all visitors (including campers) will be evacuated from the park.

* Rat populations: Like other islands vulnerable to exotic species, the Dry Tortugas support a population of black rats (*Rattus rattus*). Abatement efforts ensue each year. Campers deal most directly with this nuisance rat population. Campers are made aware, through hand-outs or ranger education, of the need to safeguard food. Appropriate camping behavior seems to prevail since campers have a vested interest.

Resource-based Issues (continued)

Natural Resources (continued):

* Rat populations (continued):

Interpretation on the detrimental consequences of the rat population is important and should be communicated to all visitors who may unwittingly support them by providing access to their food and/or water. Rats can potentially affect nesting sea turtle and bird activities through its predation on eggs. The Dry Tortugas islands provide such critically valuable nesting habitat for nesting sea turtles and sooty terns because these Keys have generally lacked the mammalian predators like raccoon or fox.

* Non-native vegetation: The potential for introducing new species into the local environment is quite high because of the large influx of daily visitors, vessels arriving from diverse ports unloading on the park dock, and various ocean currents and eddies. Invasive, non-native vegetation can be detrimental to native populations and natural processes.

The species of greatest concern has been the Australian Pine (*Casuarina equisetifolia*), which is actively eradicated by NPS vegetation specialists. It has essentially been removed from Loggerhead Key, where it was prolific. Its extensive and shallow roots interfere with nesting sea turtles. Female turtles can be impeded by the roots and abandon their nesting attempt, or hatchlings may become trapped beneath these tree roots as they emerge from the nest. East Key, which experiences very little human impact and has maintained its native vegetation, supports the highest concentration of nesting sea turtles in the Dry Tortugas.

Long lists of non-native vegetation exist for the park. Many of these, including members of the Agave family and several varieties of grasses, are currently being targeted for removal.

Other Natural Resource Issues: Since natural processes and populations are closely interconnected and highly dynamic, the potential for new discoveries about natural resources in the park is very high. Additionally, increased visitation and associated human impacts (global, regional, and local) are spurring new natural resource issues that have not been present before. For instance, some species of gulls that historically left the park in winter are remaining because of the availability of human food. As a result, the gulls' presence is coinciding with the sooty tern nesting season, which lasts from approximately January through September. The gulls have discovered a new food source in the exposed tern eggs on nearby Bush Key. Because of this change in gull migrating behavior and a low rainfall year resulting in only limited groundcover to protect birds, the 2001 sooty tern nesting season saw a loss of two-thirds of the colony to predating gulls. Other examples of issues are Saharan dust and Mississippi River sediments found at Dry Tortugas NP.

Resource-based Issues (continued)

Cultural Resources

* Museum collections are at Everglades NP: There does not appear to be a strong need to interpret the location of the park's museum collection. Few visitors will probably ever wonder where some activities, such as the storage of artifacts, are conducted. Many are impressed by the enormous isolation of the park. They quickly discover that electricity, water, and other basic necessities are precious commodities in this remote setting. Most visitors understand and appreciate that the park is a special place, and that special conditions exist. If told that the park's museum collection is stored safely on the mainland, few visitors would ever question such a logical management action. If climate and security conditions permit (for example, in visitor center exhibits), visitors should be provided with representative examples of the museum collection that support the interpretive story.

* Fort stabilization: Fort Jefferson is in the midst of a crucially important, multi-million-dollar stabilization project. Over the upcoming years, visitors will participate in this project. They will watch masons and preservationists continue their work on the fort. They will see first-hand the stabilization of one of the most remarkable structures in the National Park System. This is an unparalleled opportunity to show the public that the National Park Service is taking active steps to protect Fort Jefferson, a premier example of an American coastal fort.

Interpretation should focus on pre-existing conditions and the urgent need for stabilization. Interpretation should also include an overview of the park's proposed stabilization plan and describe the types of stabilization tasks required. As part of the process, visitors should understand the significance of the Totten embrasures. Visitors should understand: 1) how the embrasures were designed 2) what they were intended to do 3) how they represent an important type of 19th-century, cutting-edge technology, and 4) how their deterioration has seriously damaged the fort's exterior. Since the SHPO has required the park to provide visitors with a suitable example of the Totten embrasure/shutter, an exhibit could be planned to incorporate these messages.

Other planned stabilization tasks should also be interpreted, such as the monitoring and repair of cracks, re-pointing of mortar, and the stabilization of features such as the shot furnace and the bakery. Throughout the project, visitors should be made aware what parts of the fort are original, why they failed, and how the NPS is changing those elements to ensure longevity in the stabilization project.

* Cannon preservation: The park's museum collection includes one of the world's most significant collections of rare, historic cannon. Outside exhibition, exposure to poor environments and lack of appropriate exhibit mounts has caused severe deterioration of these important

Resource-based Issues (continued)

Cultural Resources (continued):

*** Cannon preservation (continued):**

resources. A collection condition survey is needed to determine treatment proposals, costs and feasibility of on-site versus off-site treatment. Conservation treatment would provide opportunities to educate the public about NPS stewardship and preservation efforts, as well as conservation processes. A site bulletin could provide the background information and a link to the park's website could document progress as the conservation treatment proceeds.

*** Cannon and anchor (situated at the entrance to Fort Jefferson):** These items, which have been on display at the fort for some years, are not currently part of the park's museum collection. They were not recovered as part of a systematic excavation and have no provenance. In the past, there have been recommendations to place them in the snorkeling area as objects of interest to park visitors. Despite these recommendations, the park does not agree with placing these items in the water; that action will not conserve them, and while they are presumably from park waters, their lack of provenance precludes them from supporting the park story. In any event, they will continue to deteriorate, and do not warrant use of precious conservation dollars to stabilize them.

When these artifacts are relocated, interpreting the management action would be crucial (at least in the short term). Tens of thousands of park visitors have seen the prominently placed artifacts. Those returning to the park would certainly be interested to know why the artifacts were removed. A temporary exhibit with the dock bulletin case could describe the management action. After some period of time, the need to interpret the removal would, arguably, diminish.

*** Visitor discovery/collection of artifacts:** With so many artifacts being uncovered and revealed, there is a critical need to proactively interpret appropriate visitor behavior. The visitors' excitement of discovery must be paired with the importance of leaving artifacts in place and reporting them to park staff. With the park's dynamic environment (e.g., shifting sands, heavy rains), artifacts emerge on a constant basis.

*** Submerged Resources (shipwreck protection and interpretation):** Dry Tortugas National Park is located at the confluence of the shipping lanes between the Gulf of Mexico, Atlantic Ocean, and the Caribbean Sea. The shoals, banks, and coral reefs are internationally known to mariners as a serious hazard to navigation. The first documented wreckage occurred in 1622, and there are now more than two hundred documented shipwrecks in the park due to unlucky or incompetent captains. The NPS has recently made an important minor change to the descrip-

Resource-based Issues (continued)

Cultural Resources (continued):

* Submerged Resources (shipwreck protection and interpretation): tion of these shipwrecks. They are now known as Submerged Resources as opposed to the old Submerged Cultural Resources. The main reason for this change is the awareness and emphasis on the positive and negative impacts of marine natural resources on these wrecks.

Interpretation of these resources will be exciting and challenging. Visitor understanding of why there are so many shipwrecks could lead them to asking all the correct questions about why the fort is here, why are there shoals this far out, etc. It also should prompt them to think about the thrill of discovery of early mariners and the fear if their vessel crashed into the reefs. In 1993, Larry Murphy, in the Submerged Resources Assessments, states that there were 241 vessel casualties (lost or damaged ships) documented for the Dry Tortugas and immediate vicinity. Murphy further states that there are at least 94 lost ships. The first documented wreckage occurred in 1622. This interpretation will impress upon them the fragility of these resources and the need for protection and preservation.

* Loggerhead Lighthouse restoration: The lighthouse is currently the property of the U.S. Coast Guard, and they are beginning efforts to preserve it. Although funding is not assured, this lighthouse, other lights that have been or are located in the park, and mariner warning and aids-to-navigation are important components of the park's cultural story.

Cultural Landscapes: Garden Key, where most visitors spend their time and where Fort Jefferson is located, is only 22 acres. With both visitor activities/facilities and administrative functions based in the fort's structure, it is very difficult—if not impossible—to separate one from the other. Additionally, trees and other vegetation have been planted over the years to provide shade and for visual enhancement. A Cultural Landscape Inventory and Report is needed to provide documentation and a plan for the parade ground that will enhance both vegetation management and interpretation, while minimizing the conflicts presented by the two uses found within the fort's walls. It will also provide guidance to park staff and residents on how to maintain this area. Though visitation to Loggerhead Key is significantly smaller, a similar effort needs to take place.

Interpretation Issues

Within Dry Tortugas National Park, the following issues affect the Division of Interpretation's ability to serve park visitors:

* Inadequate funding: The park is developing a Business Plan. Workload analysis indicated that Interpretation has a personnel short-

Interpretation Issues (continued)

* Inadequate funding (continued):

Keys Visitor Center in Key West, as well as to fill in for staff at Garden Key when they are on leave, or at training, or when a position is vacated. In 2002 there were two interpreters working eight-day shifts at Garden Key. Only two of their work days overlapped per week; on all other days, only one interpreter was in the park. Workload often precludes on-site interpreters from presenting formal programs when the ferries are at the fort. Once the new GMP Amendment is implemented, visitor loading will be reduced somewhat. Housing limitations do not make it feasible to add the needed on-site employees. One potential solution is to plan for additional interpreters to ride the ferries with the visitors, then offer interpretive activities in the park. Providing a range of effective non-personal interpretive opportunities (exhibits, waysides, site bulletins, and audio tours) is another strategy for serving visitor needs, while working within the inevitable shortfalls of on-site staffing.

* Concession's contracts for ferry and seaplanes: Sometime in 2003-2004, a concession contract will be issued to one ferry operator (at the time of this writing, there are two ferry operators, each transporting no more than 100 people daily, under Incidental Business Permits). The new concessioner will have a daily cap of 150 visitors.

One seaplane operator offers services throughout the day, currently with no cap. A seaplane concession contract will be issued to one carrier with a daily cap of 60 visitors. Opportunities also exist for the ferry operator to provide excursion trips to park resources such as the Windjammer wreck site and Loggerhead Key.

A major issue for the park is to communicate resources preservation messages, facility information about Garden Key, and the significance of the park before visitors arrive at Garden Key. The daily influx of visitors is concentrated on about one-quarter of this 22-acre site. Lack of knowledge about the impacts of feeding gulls, standing on coral or in seagrass beds, and safety-related items such as hazards of the fort, potential for sunburn, and no fresh water on-site, make effective communication of these messages before departure a critical need. Optimally, the park will provide an interpreter to travel with visitors each day, who can communicate these messages formally before leaving Key West and 'rove' while onboard. Because of NPS staffing shortfalls, concessioner personnel will continue to play a key role in many interpretive efforts. The ferry operator will be required to station someone at the swim beach to provide basic snorkeling instruction for the purpose of resources protection. The ferry contractor will also be required to provide interpretive training for their staff in accordance with NPS 2001 Management Policies (10.2.4.4 Interpretation by Concessioners). The contract requires that the concessioner develop an interpretive plan

Interpretation Issues (continued):

*** Concession's contracts for ferry and seaplanes (continued):**

to be approved by the National Park Service. If the capacity exists, the NPS will provide interpretive training as well.

Other means of communication that have been discussed are orientation waysides next to the ticket booth at the dock as well as on board the ferry itself, a short introductory video to be shown in-transit, and providing visitors with a park newspaper when they check in for their trip. The park hopes to implement an audio tour for visitors to Garden Key to be passed out to ferry and seaplane passengers in Key West (or Garden Key to others) to provide interpretation prior to visitor arrival.

Crowd control when ferries arrive: Presently, up to 200 visitors arrive in the park within a 15-minute period. They disembark onto a dock, then move to an open area outside the fort where they stash their gear. Each of the two ferry operators then offers a guided tour of the fort, often with almost 100 people per tour. The new GMP Amendment calls for staggering visitor arrival to allow for better group management, and a limit of 25 people per tour. Meeting this limit will be a challenge. The park is investigating the use of audio tours, as part of a new tour system, in lieu of group tours. This will allow visitors to explore the resource at their own pace and assure the quality of the interpretive message.

* Expanding the visitor center and park offices: Ironically, space is precious in this massive fort. The visitor center is presently 570 square feet, the bookstore is 240 square feet (including storage), one office shared by two interpreters is 250 square feet, and a common storage/workspace is 435 square feet. The park is developing a facilities plan to reassess space allocation. The Division of Interpretation is recommending to the facilities-plan work group that the visitor center be expanded by two casemates, which will allow for 240 square feet for the interpretive offices, 225 square feet for a small video viewing area, 495 square feet for the bookstore (including stock storage), and 990 square feet for exhibits.

* Changes in housing and administrative functions: Park offices are only 329 square feet, and accommodate the park radio, copier, printer, satellite phone, and six workstations. Added staff on-site have created a "housing crisis" situation. The new GMP Amendment brings new activities such as fee collection, reservations for camping, and required permits for activities such as scuba diving in the Research Natural Area. The facilities plan, under development in the spring 2003, will determine office space needs and identify critical on-site housing needs.

* Dry Tortugas NP is Managed by Everglades NP: Although there are some advantages to this situation, having Everglades NP Division Chiefs in Homestead FL (about a day's travel away) manage activities and supervise staff at Dry Tortugas National Park can be very challenging.

Interpretation Issues (continued):

* Realigning the fort tour route and expanding fort access: Park offices and storage presently occupy space of high interpretive value. The current administrative offices are located in what was the Provost's Office and include a cell where, perhaps, Dr. Samuel Mudd (who was convicted as a co-conspirator in the assassination of Lincoln) was incarcerated after an escape attempt. The storage space (aka "Bat Cave") is located in a powder magazine adjacent to a high visitor use area. The Interpretive staff is recommending that the storage space be located in the administrative area of the fort, and that the powder magazine be used for interpretive purposes. Additionally, the park staff is proposing that a bastion magazine and the small parade magazine be opened for interpretive purposes. The curtain magazine would provide an excellent area for displaying reproduction historic furnishings which illustrate the activities and roles of artillery and ammunition at the fort. (Furnishing rooms will require coordination with the park's Museum Curator, because the objects, though reproductions, become part of the park's museum collection.) Subsequent stops (at the bastion and parade magazines), requiring only minimal interpretation, could reinforce these messages.

The cell above the sally port that Dr. Mudd occupied was opened to the public in 2002. Here, on the second tier of the fort, there is a small, excavated trench that he and other prisoners made to drain water so that they could sleep on a dry floor. It is a powerful sight and speaks volumes about prison life. This area is adjacent to a housing unit. One proposed self-guiding trail would relocate the park housing unit. This would not only relocate a modern intrusion to a more appropriate area inside the fort, but the historic quarters vacated could then be historically furnished to provide a valuable example of military housing or office space.

There is a system of wayside exhibits throughout the fort that visitors follow from one point to the next. While it is an effective tool to give visitors an overview of the fort, it does not capture the natural history story, nor is there any kind of programmatic interpretation for those with physical or visual impairments. A major interpretive issue is how to integrate multiple interpretive media methods into a new tour that may or may not approximate its current alignment. One proposal is to have a self-guiding trail that is dramatically different in layout and design.

* Fort Stabilization story: This is a huge effort, expected to take many years and millions of dollars. Because of its ongoing nature, it should be part of the interpretive story. Iron elements that had been installed in the embrasures are deteriorating and causing the masonry to fail. Stabilization crews are removing these "Totten shutters" and replacing the brick, without replicating the shutters themselves. As a condition for approval of the project, the State Historic Preservation Officer (SHPO) requires that the park interpret the role and function of these shutters.

Interpretation Issues (continued):

* **Americans with Disabilities Act (ADA) Compliance Issues:** The park does not meet accessibility standards. There is no hardened pathway between the dock and the fort, or to the swim beach. It is not feasible to install elevators to the upper tiers of the fort. Currently, walkways on the lower tier are made of brick, and there are numerous steps up and down between the walkway and the casemates and even within the casemates themselves. Funding requests have been submitted to bring the latter up to ADA standards. However, a Cultural Landscape Study needs to be completed before the walkways change in the interior of the fort. Either the park or the concessioner will need to invest in beach wheelchairs. However, storage for them is an issue. An audio tour, along with a printed version, will help those with sensory impairments to access the upper levels, and a publication can provide programmatic access to those unable to climb the steps to the upper levels. Captioning the proposed video tour will also help the park to address some of these issues.

* **Interpretive Development Program:** Most interpreters have completed some elements of this program but have other modules to complete. For park staff this is a challenge because of their remote location, staff limitations that make it difficult for videotaping of programs, and lack of internet and telephone access. However, the frontline interpreters must be highly independent and innovative; in the course of their day-to-day tasks they can complete projects that can be submitted as products for various modules. The biggest challenge is carving out time and dollars for them to be able to travel to receive even the 100-level classes. Nonetheless, the park is committed to this program, and needed elements are identified in employee Individual Development Plans.

* **Shipwreck interpretation:** The park contains more than 200 historically documented shipping casualties, some from as early as 1622 from the Spanish fleet containing the *Atocha*. More than 90% of the navigable areas in the park shallower than 10 meters have been surveyed. However, the location of shipwrecks at Dry Tortugas is not publicized in order to prevent resource-damaging activities such as looting or caching of artifacts. The park has identified three wrecks that may be opened for interpretive purposes: the Windjammer, the East Key Wreck, and the Brick Wreck. Due to shallow waters, sensitive marine resources, and navigational challenges, it is not recommended that East Key Wreck be developed for interpretation at this time. However, the Windjammer and Brick Wreck are currently deemed appropriate to interpret. How to effect this has yet to be determined, but options such as waysides, plastic dive cards, internet technology, film or video, and publications can be considered. The park will work with Biscayne National Park, the Florida Keys NMS, and Florida state parks to develop an integrated regional approach to interpreting these kinds of resources.

Interpretation Issues (continued):

* Suitable area for providing interpretive programming: There is a need for areas in the park where formal interpretive programs can be offered. There is currently no climate-controlled interior space that can accommodate more than 15 visitors. Because most evening audiences typically range in size from 30-60 visitors, programs currently must be held outdoors at risk of inclement weather. Set-up and breakdown time for outdoor programs is time-consuming (about two hours per program); chairs and equipment must be removed from storage, positioned, then placed back in storage following each program. One solution might be to create an auditorium inside one of the first-tier casemates within the proposed visitor center complex. Using a full casemate, this proposed auditorium could accommodate up to 30 visitors (for formal interpretive programs or viewing the park film). Because set-up time and fear of inclement weather virtually would be eliminated, evening programs could be offered on a far more regular basis, perhaps even nightly.

A shaded outdoor area for providing daytime programs is also needed. There are several areas inside and outside the fort that enjoy some shade, but each would require the use of portable benches or chairs.

* Adequate interpretive work/storage space: Interpretive efforts are currently hampered by inadequate storage and work space. The problem is compounded by the need to interpret a wide range of resources. The demands for space include the need for computer work areas, media development areas, slide storage, living history equipment storage, research materials, and interpretive props. The current available space of 250 square feet is clearly inadequate. If this work space is relocated to an area outside the visitor center complex (and into an office area shared by other park staff), more space would potentially be available both for the visitor center exhibits and for the interpretive staff.

* Demands on interpretive staff: Because the park staff is small and it is not uncommon for one of the positions to be vacant, the two (current) interpreters must share many responsibilities. Duties include working in the Florida National Park and Monument Association (FNPMA) Bookstore, coordinating volunteer functions, serving as public information officer, helping with campground operations, conducting resource management activities, and helping with park research. Although these responsibilities promote professional growth and development, they do limit the time interpreters have to serve park visitors. One strategy would be to share some of these duties (e.g., FNPMA duties and volunteer coordination) with the park's administrative aide.

FOUNDATION: VISITOR PROFILES

Annual Visitation: Dry Tortugas NP, 1991-2002:

<u>Year</u>	<u>Yankee Freedom¹</u>	<u>Sunny Days/Fast Cat²</u>	<u>Seaplane³</u>	<u>Total Visitors</u>
1991*	- -	- -	- -	26,870
1992**	- -	- -	- -	34,258
1993	- -	- -	- -	35,209
1994	- -	- -	- -	23,266
1995	3,881	- -	4,414	46,544
1996	9,867	1,644	2,697	46,567
1997	11,517	7,874	8,626	56,207
1998	17,401	12,121	7,750	69,465
1999	24,553	18,206	8,526	84,109
2000	26,215	25,612	8,612	95,261
2001	28,574	23,685	4,534	88,674
2002	29,025	24,690	8,417	86,351

Note: Numbers across the horizontal lines above do not add up because visitors traveling to the park in private vessels or chartered boats are not separated out as a column, but are included in the annual visitation totals.

¹ Ferry service was on the *Yankee Freedom I* from 1995-98. This vessel was replaced by the *Yankee Freedom II* in 1999

² The *Sunny Days* offered ferry service from 1995-98. This vessel was replaced by the *Fast Cat* in 1999

³ Seaplane service was by:

1995: *Key West Seaplane Service*

1996: *PanAm Airbridge, Key West Air, Seaplanes of Key West*

1997: *Key West Air, Seaplanes of Key West*

1998-2002: *Seaplanes of Key West*

(flights were limited in 2001 due to damaged aircraft)

* park was still "Fort Jefferson National Monument," established in 1935

** park was expanded and named "Dry Tortugas National Park" in 1992

Monthly Visitation for Dry Tortugas, 2002

January - - -	6,185	May - - -	9,446	September --	3,827
February - -	7,255	June - - -	8,782	October ----	5,468
March - - - -	8,879	July - - - -	8,921	November --	4,924
April - - - - -	9,556	August --	7,325	December --	5,783

Total visitors to Dry Tortugas NP in 2002 = 86,351

Visitor Services Project for Dry Tortugas NP:

During the week of March 20-26, 2002, the University of Idaho's Cooperative Park Studies Unit conducted a Visitor Services Project study at Dry Tortugas National Park. Of the 400 questionnaires distributed to visitors on the bridge into Fort Jefferson, 311 were returned for a 77.8% response rate. The data below summarizes the survey results:

Mode of transportation: Commercial ferry (69%), air charter (11%), commercial charters other than ferries (10%), private sailboats (7%), private motorboats (2%), commercial dive boats (<1%), other (4%) [Note: numbers add up to more than 100% because visitors may use more than one form of transportation.]

Group affiliation: families (59%), friends (25%), family/ friends (17%)

Group size: groups of two (48%), groups of 3 or 4 (30%)

Age: under 15 (15%), 16-30 (14%), 31-55 (48%), 56 and older (23%)

Places of Origin: Florida (22%), New York (10%), Pennsylvania (5%), other states (63%) [Note: international visitors are 4% of all visitation]

Visits to DRTO: once in past year (94%)

Pre -visit DRTO Information: Friends/relatives (40%), internet (33%)

Most common activities: use restrooms (89%), swim/beach (83%), visit Fort Jefferson (80%), snorkel (77%), take self-guiding tour (62%)

Most commonly visited locations in the park: Garden Key (98%), Loggerhead Key (7%), natural/cultural zone area (7%)

Satisfaction: Most visitors (93%) rated the overall quality of park services at Dry Tortugas National Park as "very good" or "good"

Other Visitor Data (from DRTO staff):

Transportation Modes:

Concession Ferry	63%	Seaplanes	9%
Recreational boats	20%	Commercial fishing	7%
Other	1%		

Day - only* or Overnighters*: **First-time* vs. Repeat* Visitors**

Daytrippers	70%	First-time	80%
Overnighters	30%	Repeat	20%

*figures are 'best estimates' from DRTO staff; not based on surveys

Visitors who take personal services tour (approximate numbers):

IBP Ferry-led tours..... about 50,000 a year

NPS Ranger-led..... about 3,500 a year (and increasing yearly)

Visitor Studies

Starting in 1998, Dry Tortugas National Park has participated in an annual servicewide survey to assist the National Park Service to comply with the Government Performance and Results Act (GPRA). This survey was developed to measure each park's performance related to NPS GPRA Goals IIa1 (visitor satisfaction) and IIb1 (visitor understanding). The survey data for 2001 is below; the data for 2002 is on the next page.

2001 Overall quality of facilities, services, & recr. opportunities

Very good: 63%

Good: 25% (88% satisfaction: combined Very Good and Good)

Average: 12%

2001 Specific ratings of facilities, services, & recr. opportunities

<u>Category</u>	<u>Approval Ratings</u>				
	<u>Very Good</u>	<u>Good</u>	<u>Average</u>	<u>Poor</u>	<u>Very Poor</u>
Park Facilities:					
Visitor Center	35%	48%	15%	2%	0%
Exhibits	49%	36%	14%	1%	0%
Restrooms	16%	62%	19%	10%	3%
Walkways, Trails, Rds	37%	47%	16%	0%	0%
Camp/Picnic Areas	38%	43%	17%	0%	2%
Combined Facilities:	35%	45%	16%	3%	1%
Visitor Services:					
Employee Assistance	61%	39%	0%	0%	0%
Ranger Programs	45%	45%	10%	0%	0%
Park Map or Brochure	52%	38%	10%	0%	0%
Commercial Services	15%	46%	27%	8%	4%
Combined Vis. Services:	48%	41%	9%	1%	1%
Recreation Ops.:					
Learning about ...	59%	29%	11%	2%	0%
Outdoor Recreation	65%	24%	11%	0%	0%
Sightseeing	65%	25%	10%	0%	0%
Combined Recr. Ops.:	63%	26%	10%	1%	0%

Visitor Studies

2002 Overall quality of facilities, services, & recr. opportunities

Very good: 49%

Good: 44% (93% satisfaction: combined Very Good and Good)

Average: 5%

2002 Specific ratings of facilities, services, & recr. opportunities

<u>Category</u>	<u>Approval Ratings</u>				
Park Facilities:	<u>Very Good</u>	<u>Good</u>	<u>Average</u>	<u>Poor</u>	<u>Very Poor</u>
Visitor Center	41%	49%	9%	1%	0%
Exhibits	40%	42%	17%	1%	0%
Restrooms*	11%*	36%*	14%*	25%*	14%*
Walkways, Trails, Rds	36%	45%	17%	3%	0%
Camp/Picnic Areas*	40%*	35%*	24%*	2%*	0%*
Combined Facilities:	36%	42%	16%	4%	0%

* The visitor survey in 2002 was done in June. On June 15, the park received 11 inches of rain, leading to a failure of the leach field system that serves the public restrooms. Therefore, the restrooms and campgrounds were closed and visitors had to use facilities on the ferries.

Visitor Services:	<u>Very Good</u>	<u>Good</u>	<u>Average</u>	<u>Poor</u>	<u>Very Poor</u>
Employee Assistance	68%	28%	4%	0%	0%
Ranger Programs	51%	29%	11%	9%	0%
Park Map or Brochure	54%	36%	7%	1%	1%
Commercial Services	31%	29%	27%	11%	2%
Combined Vis. Services:	53%	31%	11%	4%	1%

Recreation Ops.:	<u>Very Good</u>	<u>Good</u>	<u>Average</u>	<u>Poor</u>	<u>Very Poor</u>
Learning about ...	51%	41%	8%	0%	0%
Outdoor Recreation	49%	39%	10%	1%	0%
Sightseeing	69%	26%	4%	1%	0%
Combined Recr. Ops.:	57%	35%	7%	1%	0%

Note: Visitor rating in ‘understanding and appreciation’ in 2001 was 86% and in 2002 it was 93%.

Visitor Groups of Dry Tortugas NP:

During the CIP Workshop in December 2001, participants compiled the following list of visitor group types that visit Dry Tortugas National Park:

* **Locals:** Generally, local visitors are an independent group. They have come to expect certain "interpretive traditions," like lantern-led fort tours and other evening programs. Locals are a key group to reach out to, especially regarding some of the new GMP Amendment changes, like the Research Natural Area (RNA), which has tended to be a controversial topic among some Florida Keys residents and regular park users.

* **Boaters:** Almost all boaters receive personal contact with park personnel, especially from protection rangers, who orient them to park regulations during daily contacts. Opportunity exists for specialized handouts or other publications to be developed to reach this population. These handouts could be distributed along with other information that is provided. It will be necessary to have increased contact with this group, in order to inform them of new GMP Amendment changes (e.g., the RNA). Contact with boaters at the Key West Interagency Visitor Center about current conditions, needed permits, and navigational changes and hazards will help to protect both these visitors and the park resources.

* **Divers:** Divers may visit the park independently or as part of an organized group with a guide. Although they tend to operate independently in the park, they often request information regarding dive sites and shipwrecks. Waterproof cards or literature that describe dive sites and wrecks open to divers could be developed for these visitors. This information should include important resource and preservation messages.

* **Salt water fishers:** These are potentially the toughest group to reach with interpretation. Some in this group have argued against the implementation of an RNA or no-take zone in the park throughout the GMP Amendment process. Tailored interpretive handouts could address these delicate issues. Information, at the least, should be provided in order to inform reef fishers of changes in fishing regulations in the park.

* **Birders:** This specialized group of visitors arrives with very specific goals and anticipations about their park experience. Birders comprise a sizable portion of park visitation in the spring months (during the spring migration). Many provide an invaluable service to the park by documenting their sightings in NPS logbooks. The NPS relies heavily on this data since no biologists or NPS personnel are employed at Dry Tortugas NP to document/research this important natural event. The NPS relationship with birders could be further developed and strengthened.

* **Commercial boats:** These boaters are much like the general group of boaters in the park. Any commercial boat should be contacted by the park staff and briefed about park regulations.

Visitor Groups of Dry Tortugas NP (cont):

* History buffs: While personal interpretation is ideal for this group, publications on special topics (e.g., Dr. Mudd's imprisonment, Civil War artillery, women's roles at the Fort...) could serve these enthusiasts well.

* Contractors/staff: Contracted workers in the park must become familiar with a variety of park regulations and policies during their stay here, such as proper water conservation and fishing regulations. Additionally, there are great opportunities for these individuals to participate in ranger activities and programs. Due to time spent in the park and exposure to NPS operations/activities, the potential is high for these individuals to leave the park as "informants" with a much greater appreciation of the park's natural and cultural resources.

* VIP's: The park benefits from various volunteers who "keep watch" at Loggerhead Key, among other responsibilities. It is imperative that volunteers, who, alone, regularly contact visitors on this island, have a clear understanding of NPS and Dry Tortugas NP policies and management issues. Interpretive staff should ensure that the dissemination of quality information and interpretation is a part of the volunteer program.

* International: The numbers of international visitors is comparatively small. Some non-personal interpretation could be provided, but the staff would need to determine which languages to offer. Though no language group is heavily represented, German and Spanish would be likely choices. Dry Tortugas NP has attained global recognition as the third largest marine reserve on earth and a significant stopover for migratory birds. If Cuba opens to U.S. citizens, it is very possible that Dry Tortugas National Park will become a stop-over for travelers (i.e., private boaters) between the United States and Havana, Cuba.

* Researchers: Because researchers provide important data integral to quality and up-to-date interpretation, it is important to forge this relationship. From time to time, researchers also provide lectures or programs in the park. These kinds of events and information exchanges could be encouraged and coordinated by interpretive staff.

* Senior Citizens: Seniors make up a significant portion of visitors to the park. They occasionally travel in organized groups, through elder hostels or historical touring companies. Because this group tends to support the national parks through visitation and political activity, they are also frequent participants in park interpretive programs.

* Retirees: Like the group described above, this visitor group has time and intentions to visit national parks. Their general support and enthusiasm for NPS sites and the NPS idea should not be taken for granted.

* Couples/families: This visitor group often participates in ranger programs and activities. The Junior Ranger program is one such program.

Visitor Groups of Dry Tortugas NP (cont):

* **Students:** Few organized school groups visit the park. To reach local students, an outreach program/strategy based on interpretive themes and messages would be highly beneficial. Local students have a vested interest in receiving education and interpretation regarding the significant marine environment of which they are a part. This effort should be based out of the future interagency Florida Keys Visitor Center.

* **Campers:** These visitors tend to "spread the word" about Dry Tortugas NP and return to camp again and again. The value of instilling significant interpretive and resource messages in this population is very high. These visitors have the greatest opportunities to participate in ranger-led activities and programs and other personal interpretive services.

* **Photographers:** May be of the professional or amateur variety. Any commercial photographer would likely be in contact with a park ranger to review NPS filming policy and get a permit. Most photographers tend to stay more than one day in the park, and they may seek out ranger programs and be a potential audience for a variety of interpretation.

* **Artists:** Generally a highly independent group. However, also a group that generally stays more than one day at Dry Tortugas NP. Many of these individuals are return visitors. They often camp, opening up opportunities for interpretive staff to reach this population.

* **Journalists/media:** These individuals will inevitably have face-to-face contact with park staff, as their activities are probably guided by an NPS permit. It's important to instill resource messages in this population, as well as accurate information about park resources and management activities that may be included in journalistic write-ups and articles.

* **Boy/Girl Scouts:** A frequent visitor group to the park, Scouts generally camp and look for physically and intellectually stimulating activities. They need lots of personal services (e.g., interpretive scavenger hunts) as well as non-personal interpretive opportunities. Scouts usually give back to the park through community service/volunteer projects, like beach clean-ups, which can be coordinated via interpretive staff.

* **Eco-tourists:** This is a key visitor group, considering the value of an informed citizenry regarding natural resource issues. Many resource-based issues exist in Dry Tortugas NP, from "bleaching" corals to exotic plants, that may be interpreted to this group.

* **Snorkelers:** This group of visitors need to receive hands-on education regarding proper snorkel behavior. Most snorkelers here are putting on a snorkel and fins for the first time. Detrimental impacts to corals in the swim areas of the park result from uninformed snorkelers. Ideally, NPS interpretive staff or concession ferry guides (through a clause in their contract) should provide snorkeling etiquette instruction to visitors.

Visitor Groups of Dry Tortugas NP (cont):

* Web visitors: The web is an ideal venue for some of the information, and even interpretation, that Dry Tortugas NP needs to provide. "Basic needs" information that is crucial to have prior to a Dry Tortugas visit could be addressed here, along with other frequently asked questions that come from potential visitors and students researching the park.

* Military: Coast Guard, Navy, and other military personnel visit the park frequently, generally as an orientation for new personnel. These visits provide opportunities to forge good relations with these groups to share some of our mission goals (i.e., natural resource protection).

* Ethnic groups: South Florida's Hispanic communities and potential visitation are the most notable. Non-personal interpretation should include Spanish translations wherever possible.

* Non-recreation users and visiting dignitaries: In most parks, these user groups are not generally considered to be a "visitor group." However, the park is regularly visited by elected and cabinet level officials and senior managers. These visits require the participation of almost all park staff. Additionally, administrative visitors such as preservation crews spend days or weeks in the park. During their off hours, they explore and learn about the park just as general visitors do.

FOUNDATION: **EXISTING CONDITIONS** (in 2003)

Interpretive Facilities: Fort Jefferson

At the dock on Garden Key, visitors find a bulletin case with temporary exhibits about Dry Tortugas National Park. From the dock, a short path leads to a wooden bridge into Fort Jefferson. The majority of park visitors—because most arrive by ferry boats—are escorted to this bridge by a concession employee who also leads a tour of the fort. (This fort tour is optional, and some ferry visitors go directly to the picnic area and/or the swim beach.) Other visitors—who arrive by seaplane or private boats—enter the fort on their own. Wayside exhibits are available to direct non -ferry visitors through the fort, or they can take one of the ranger-led tours of the fort when offered two or three times a week.

Inside the fort, a small visitor center is built into two of the fort's casemates. The visitor center contains two small exhibit rooms, a cooperating association sales room, and a small audiovisual space where a video program is available by pushing a button. Exhibits (produced by HFC in the 1970s) in the first room concentrate on Fort Jefferson's development and military history. Exhibits in the second room (developed by park staff) cover the park's natural history. Its displays include: an exhibit on sooty tern research; an exhibit on turtle research; an exhibit on coral reef ecology; a touch table with nature objects for visitors to handle; and a journal -writing table for visitors to write their observations. Outside the fort, a picnic area, swim beach, and moat wall walkway are available.

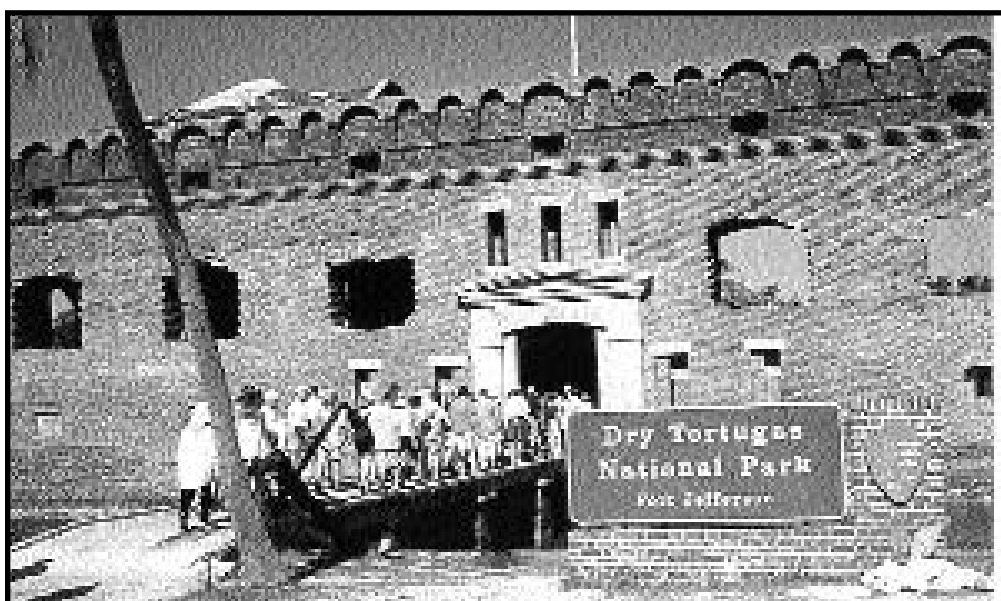
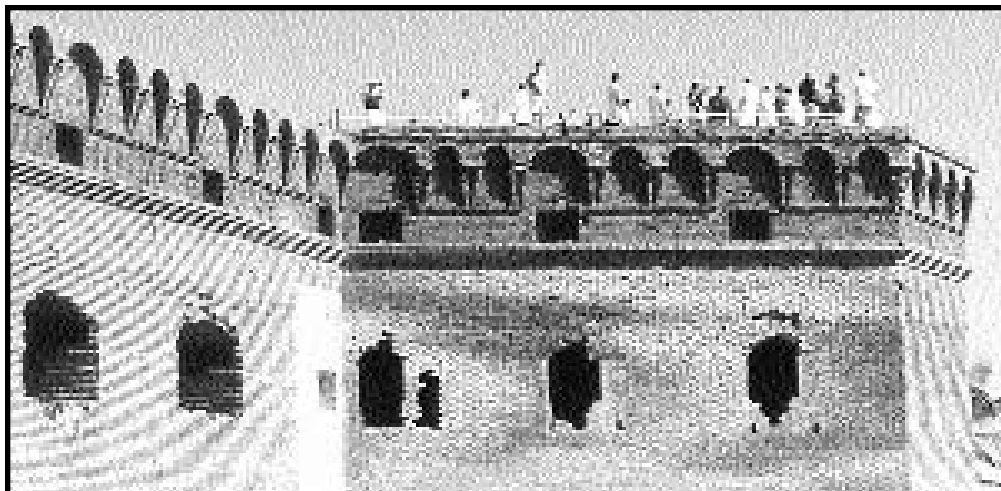
The cooperating association sales area is operated by the Florida National Parks & Monument Association (FNPMA). The sales area contains approximately 85 titles (mostly books on military history and nature), about 40 audiovisual products (e.g., videotapes), and about 20 theme (e.g., mugs) and convenience (e.g., film) items. The FNPMA Cooperating Association sales area at Dry Tortugas National Park grosses more than \$140,000 in FY 2002. Of that, the park received just shy of \$9,000 in direct Aid- to-NPS donations, plus sales help support.



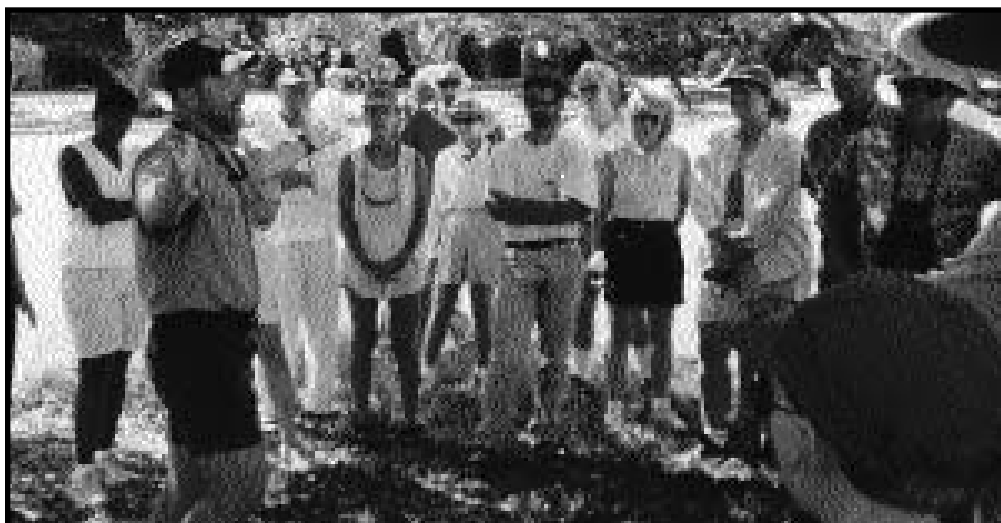


Most visitors to Dry Tortugas National Park arrive by ferry at the dock at Garden Key (above), where there is a shelter and a bulletin case (below). Fewer than half the visitors to Dry Tortugas National Park arrive by the seaplanes or private boats (visible along the harbor outside Fort Jefferson on Garden Key, bottom of previous page).





Most visitors tour Fort Jefferson with a ferry concession employee (top, and above). Ranger-led tours (below) are available 2 to 3 times a week.








Once visitors enter Fort Jefferson and turn right, they can find wayside exhibits and the visitor center entrance (above). The visitor center's exhibits interpret the park's natural and cultural history (below).




Media Conditions: MIDS Summary

Media conditions for all NPS areas are now listed in the servicewide Media Inventory Database System (MIDS); for a full listing of media conditions (as reported and updated by park staff) at Dry Tortugas NP, visit the MIDS website at www.hfc.nps.gov/mids/. As of 2002, the MIDS summary for Dry Tortugas NP is shown below and on the next page.

MIDS: NPS Media Inventory Database System						Page 1 of 1
						
Listing for Park DRTG, Region SER						
Inventory Listings Records 1 to 13 of 28						
Select the Media Title link to view a detailed record.						
Park	Media	Last Update	Media Title	Current Condition Available	Install Date	HPC Preferred
DRTG WAY	0425/2001		15 Inch Redwood Smoothie	Yes / No	1979	Don't Know
DRTG WAY	0425/2001		16 Millies Bridge	No / No	1979	Don't Know
DRTG WAY	0425/2001		A Little Red Hill	Yes / Yes	2000	Yes
DRTG WAY	0425/2001		Barrels	Yes / No	1979	Don't Know
DRTG WAY	0405/1999		Campanula Klack	Yes / Yes		No
DRTG WAY	0405/1999		Dark Redwood House	Yes / Yes		Don't Know
DRTG WAY	0405/1999		For Insects, Colder of the	No / No	1996	Yes
DRTG WAY	0425/2001		General Maintenance Plan	No / Yes		Yes
DRTG WAY	0425/2001		Grassland	No / No	1979	Don't Know
DRTG WAY	0425/2001		Has Red Rain	No / No	1979	Don't Know
DRTG WAY	0425/2001		Let's Walk	No / No	1979	Don't Know
DRTG WAY	0425/1999		Let's Walk Directional Sign	Yes / No	1979	Don't Know
 MIDS Home 						

Media Conditions: MIDS Summary



MIDS: NPS Media Inventory Database System Page 1 of 1

 **Grand Park Canyon Media Inventory Database System**


Listing for Park DRTG, Region SER

Inventory Listing: Records 13 to 24 of 28
 Select the Media Title link to view a detailed record.

Park	Media	Last Update	Media Title	Content/ Condition Acceptable	Install Date	HPC Preferred
DRTG	WAY	04/23/2002	Life at the Fort Index	Yes / No	1979	Don't Know
DRTG	WAY	04/23/2002	Many Days at Fort Jefferson	Yes / No	1979	Don't Know
DRTG	WAY	04/23/2002	Burrill Ridge	No / No	1979	Don't Know
DRTG	WAY	04/23/2002	Rock Ridge	Yes / Yes	2000	Yes
DRTG	WAY	04/23/2002	The Bakery	Yes / No	1979	Don't Know
DRTG	WAY	04/23/2002	The Big Machine	No / No	1979	Don't Know
DRTG	WAY	04/23/2002	The Dam	No / No	1979	Don't Know
DRTG	WAY	04/23/2002	The Fort Way Hole	No / No	1979	Don't Know
DRTG	WAY	04/23/2002	Happy Place	No / No	1979	Don't Know
DRTG	WAY	04/23/2002	The Hospital	Yes / No	1979	Don't Know
DRTG	WAY	04/23/2002	The Lighthouse	Yes / No	1979	Don't Know
DRTG	WAY	04/23/2002	The Main Street	No / No	1979	Don't Know
DRTG	WAY	04/23/2002	The Plaza	No / No	1979	Don't Know

 [MIDS Home](#) 




MIDS: NPS Media Inventory Database System Page 1 of 1

 **Grand Park Canyon Media Inventory Database System**

Listing for Park DRTG, Region SER

Inventory Listing: Records 25 to 28 of 28
 Select the Media Title link to view a detailed record.

Park	Media	Last Update	Media Title	Content/ Condition Acceptable	Install Date	HPC Preferred
DRTG	WAY	04/23/2002	The Big Machine	Yes / No	1979	Don't Know
DRTG	WAY	04/23/2002	The Dam	Yes / No	1979	Don't Know
DRTG	WAY	04/23/2002	The Fort Way Hole	No / No	1979	Don't Know
DRTG	WAY	04/23/2002	The Plaza	No / No	1979	Don't Know

Media Conditions: Audiovisual Programs

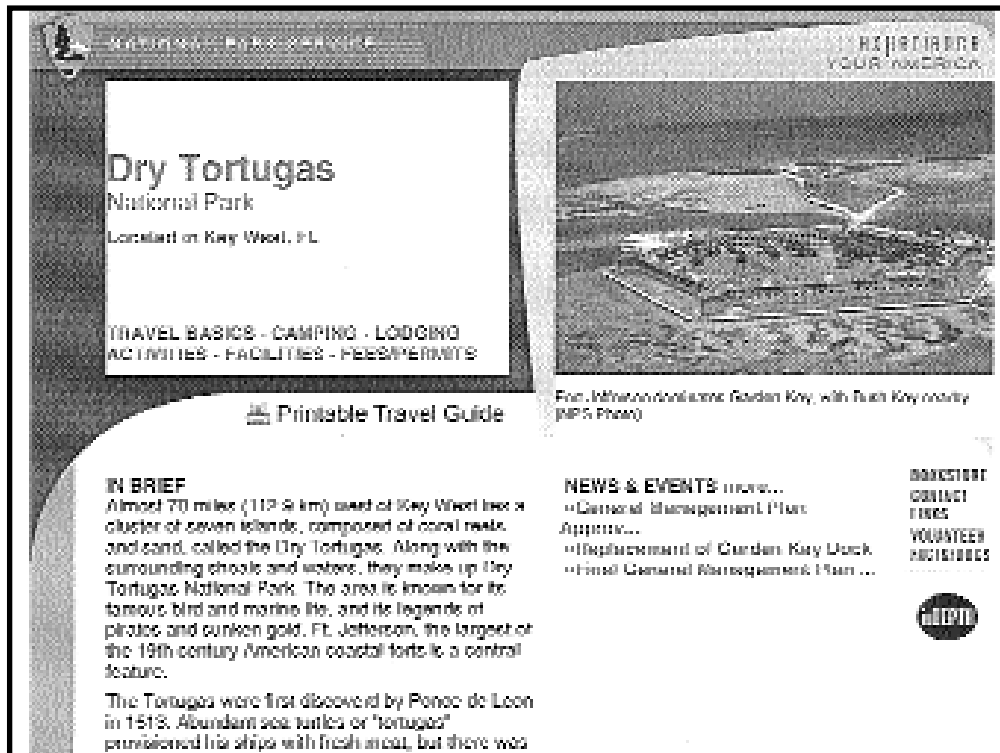
Within the MIDS data for Dry Tortugas National Park, there is only one audiovisual program listed (below):

1. Fort Jefferson: Gibraltar of the Gulf—a 10-minute video done by Paul Winegar of SERO-Public Affairs in 1991—is outdated. The program was made before Fort Jefferson National Monument became Dry Tortugas National Park; it neither captures the correct park name, nor represents resource management concerns or any other part of the natural resources story. This video program is available in the park visitor center's second exhibit room via push-button on the video monitor. There is seating for about 15 visitors to watch this audiovisual program.

National Park Service Media Inventory Database System MIDS	
Information on Fort Jefferson, Gibraltar of the Gulf at Dry Tortugas National Park Return to Inventory Search Authorized User Login	
<hr/>	
Information about the Reporter	
Name:	Peggy Scherbaum
Title:	
Telephone:	305 293 0152
Fax:	
Report Date:	05/15/1999
<hr/>	
General Item Information	
Park:	Dry Tortugas National Park
HEC ID Code:	
Park ID Code:	
Media Title:	Fort Jefferson, Gibraltar of the Gulf
Location in Park:	
Format of Media:	
Installation Date:	1996
HEC Protected?	Yes
<hr/>	
Specific Audio Visual Information	
Who produced this AV Program? (Contractor or HEC subcontractor)	HPC
What materials and format are available at HEC?	
AV Program Content:	Restricted Use
NPS, HEC, or park AV Program ID numbers:	TV 614
AV Program format:	Video
AV Program length:	10 minutes
Is the AV Program park-specific?	No
How frequently is the AV Program used?	10 times a day
What is the audience reaction?	The film is very good and holds interest
In what setting is the AV Program shown?	Sit down area in casemate of Fort
How many seats are available?	10
Is the AV Program Acceptable?	No
If Unacceptable, please explain:	Program is outdated. RM concerns are grossly under-represented. Does not reflect change from National Monument to National

Media Conditions: Web Page

Dry Tortugas National Park's web page (<http://www.nps.gov/drto/>) was updated in 2001. Dry Tortugas NP's ParkNet page (below) allows visitors to hit an "inDEPTH" link that connects them to the park's General Management Plan Amendment web page (bottom).



Dry Tortugas National Park
Located on Key West, FL

TRAVEL BASICS - CAMPING - LODGING
ACTIVITIES - FACILITIES - FEES/PERMITS

[Printable Travel Guide](#)

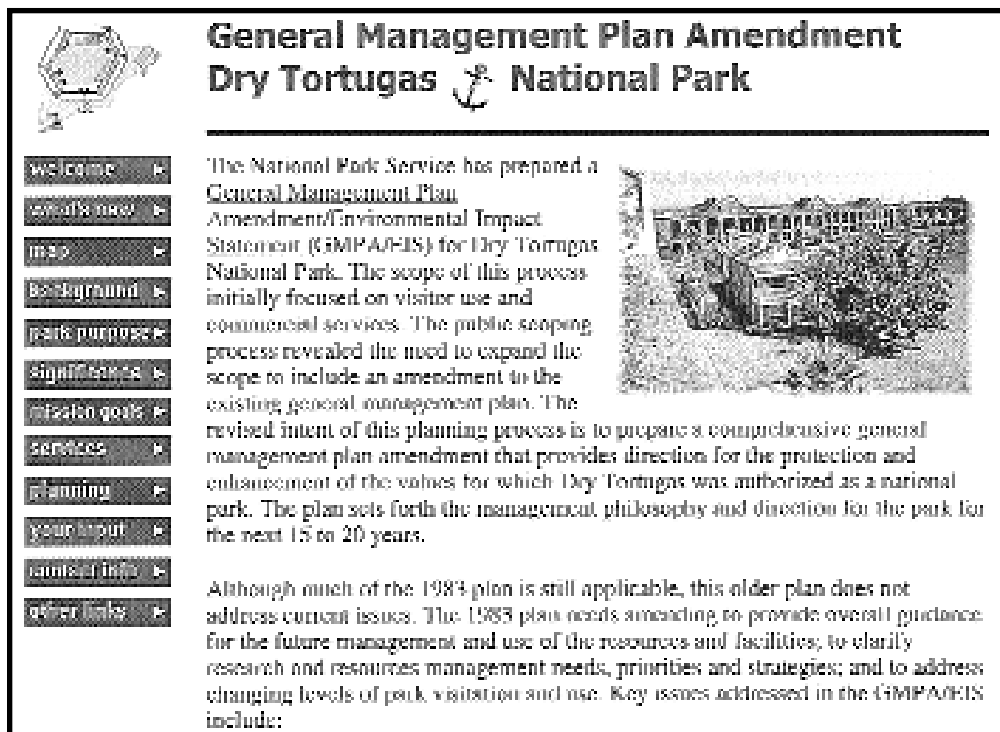
IN BRIEF
Almost 70 miles (112.9 km) west of Key West lies a cluster of seven islands, composed of coral reefs and sand, called the Dry Tortugas. Along with the surrounding shoals and waters, they make up Dry Tortugas National Park. The area is known for its famous bird and marine life, and its legends of pirates and sunken gold. Ft. Jefferson, the largest of the 19th century American coastal forts, is a central feature.

The Tortugas were first discovered by Ponce de Leon in 1513. Abundant sea turtles or "tortugas" provisioned his ships with fresh meat, but there was

NEWS & EVENTS more...
» General Management Plan Amendment...
» Replacement of Garden Key Dock
» Final General Management Plan ...

DONORSTOCK CONTACT
FINES
VOLUNTEER
REGISTRATION

inDEPTH



**General Management Plan Amendment
Dry Tortugas National Park**

The National Park Service has prepared a **General Management Plan Amendment/Environmental Impact Statement (GMPA/EIS)** for Dry Tortugas National Park. The scope of this process initially focused on visitor use and commercial services. The public scoping process revealed the need to expand the scope to include an amendment to the existing general management plan. The revised intent of this planning process is to prepare a comprehensive general management plan amendment that provides direction for the protection and enhancement of the values for which Dry Tortugas was authorized as a national park. The plan sets forth the management philosophy and direction for the park for the next 15 to 20 years.

Although much of the 1983 plan is still applicable, this older plan does not address current issues. The 1983 plan needs amending to provide overall guidance for the future management and use of the resources and facilities; to clarify research and resources management needs, priorities and strategies; and to address changing levels of park visitation and use. Key issues addressed in the GMPA/EIS include:

[welcome](#) [what's new](#) [map](#) [background](#) [park purpose](#) [significance](#) [mission goals](#) [services](#) [planning](#) [your input](#) [contact info](#) [other links](#)

Media Conditions: Wayside Exhibits

Wayside Exhibits at Fort Jefferson

In 1979, park staff installed a series of 20 wayside exhibits that HFC had planned, designed, and produced for Fort Jefferson National Monument. The content and design of all these wayside panels need to be updated.

<u>Title</u>	<u>Location</u>	<u>Size</u>	<u>Condition</u>
Let's Walk!	Outside Visitor Center	36x24	Fair
16 Million Bricks	Along self-guiding trail	36x24	Fair
Water/ "Dry" Tortugas	Along self-guiding trail	36x24	Fair
Gunrooms	Along self-guiding trail	36x24	Fair
What's a Bastion?	Along self-guiding trail	36x24	Fair
Bastion Magazine	Along self-guiding trail	36x24	(missing)
Barracks	Along self-guiding trail	36x24	Fair
The Big Magazine	Along self-guiding trail	36x24	Fair
Hot Shot Furnace	Along self-guiding trail	36x24	Fair
The Moat	Along self-guiding trail	36x24	Fair
The Parade	Along self-guiding trail	36x24	Fair
The Hospital	Along self-guiding trail	36x24	Fair
15-inch Rodman	Along self-guiding trail	24x24	Fair
Tortugas Harbor	Along self-guiding trail	36x24	Fair
Traverse Magazine	Along self-guiding trail	24x24	Fair
200-pounder Parrott	Along self-guiding trail	24x24	Fair
The Lighthouses	Along self-guiding trail	36x24	Fair
It was Not a Happy Place	Along self-guiding trail	36x24	Fair
The "Dungeon"	Along self-guiding trail	36x24	Fair
The Bakery	Along self-guiding trail	36x24	Fair
Life at the Fort Today	Along self-guiding trail	36x24	Fair
Coaling Docks	Atop South Coaling Dock	36x24	Fair

Fort Trail Directional Panels

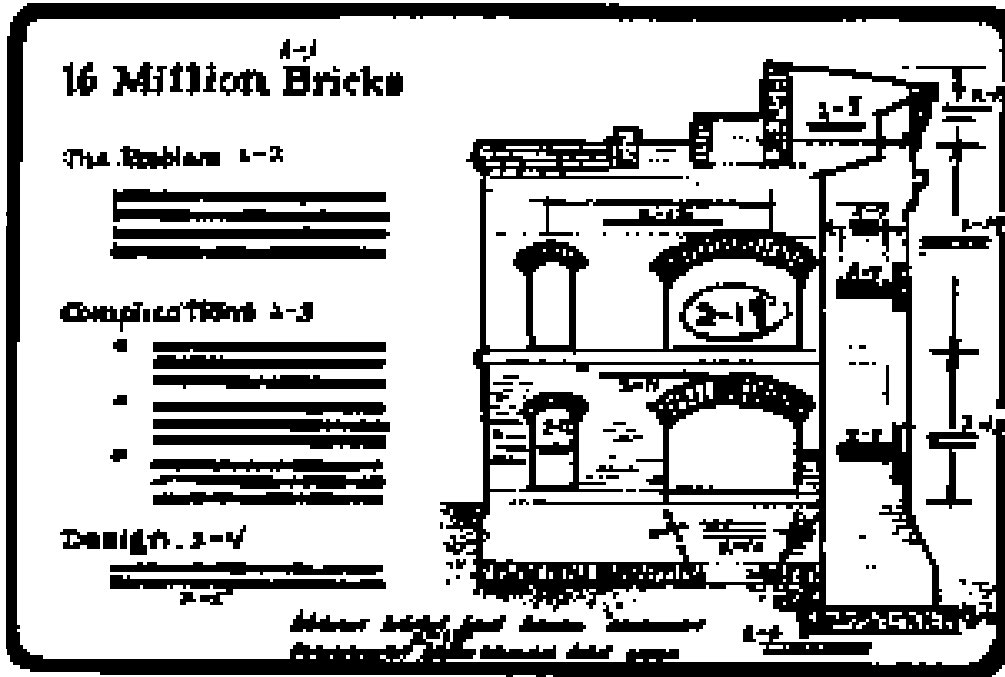
Along with the wayside exhibits produced in 1979, a series of 29 22x22 directional panels were produced to help visitors follow the fort trail.

Porcelain Wayside Exhibits

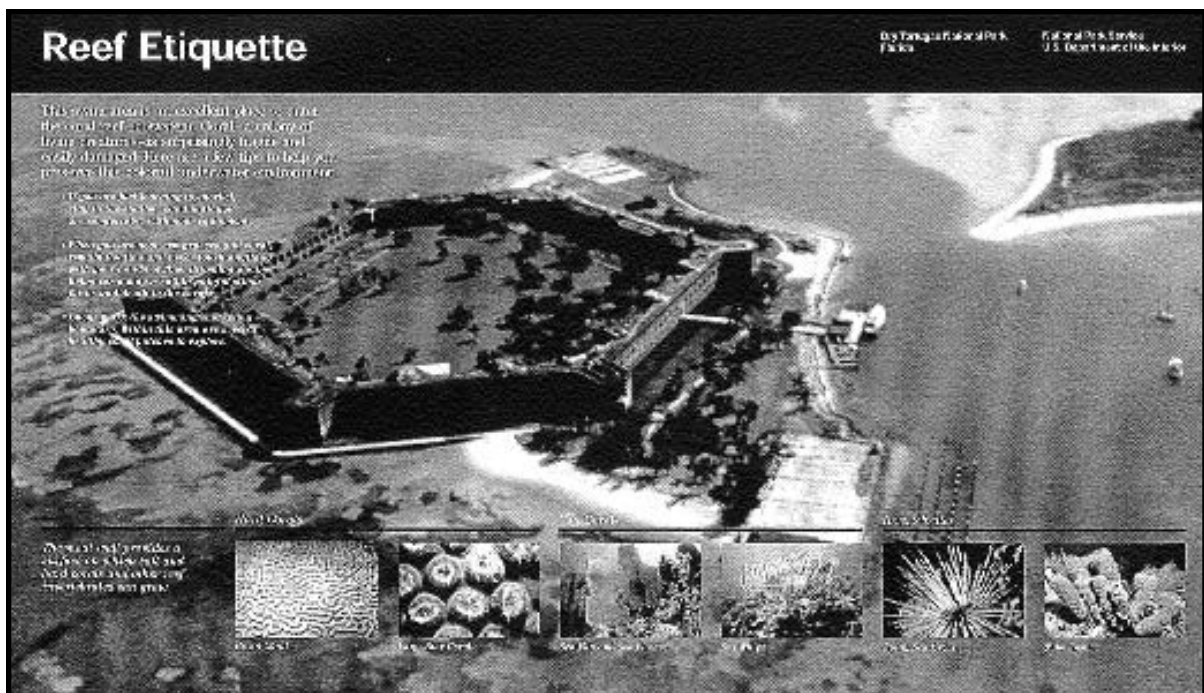
In 1998, the Dry Tortugas NP staff worked with HFC's Dept. of Wayside Exhibits to plan, design, and produce two porcelain wayside exhibits:

<u>Title</u>	<u>Location</u>	<u>Size</u>	<u>Condition</u>
Reef Etiquette	Near the swim beach	42x24	Excellent
A Living Reef	Near the swim beach	42x24	Excellent

Media Conditions: Wayside Exhibits (cont.)



Dry Tortugas National Park has a series of screen-printed, fiberglass-embedded panels (sample above)—part of a self-guiding trail system—that were planned, designed, and produced by HFC in the late 1970s. In 1998, two porcelain panels (sample below) were planned, designed, and produced with assistance from HFC's Department of Wayside Exhibits. Note the difference in design techniques and details between these samples.



Media Conditions: Publications

Unigrid Folder

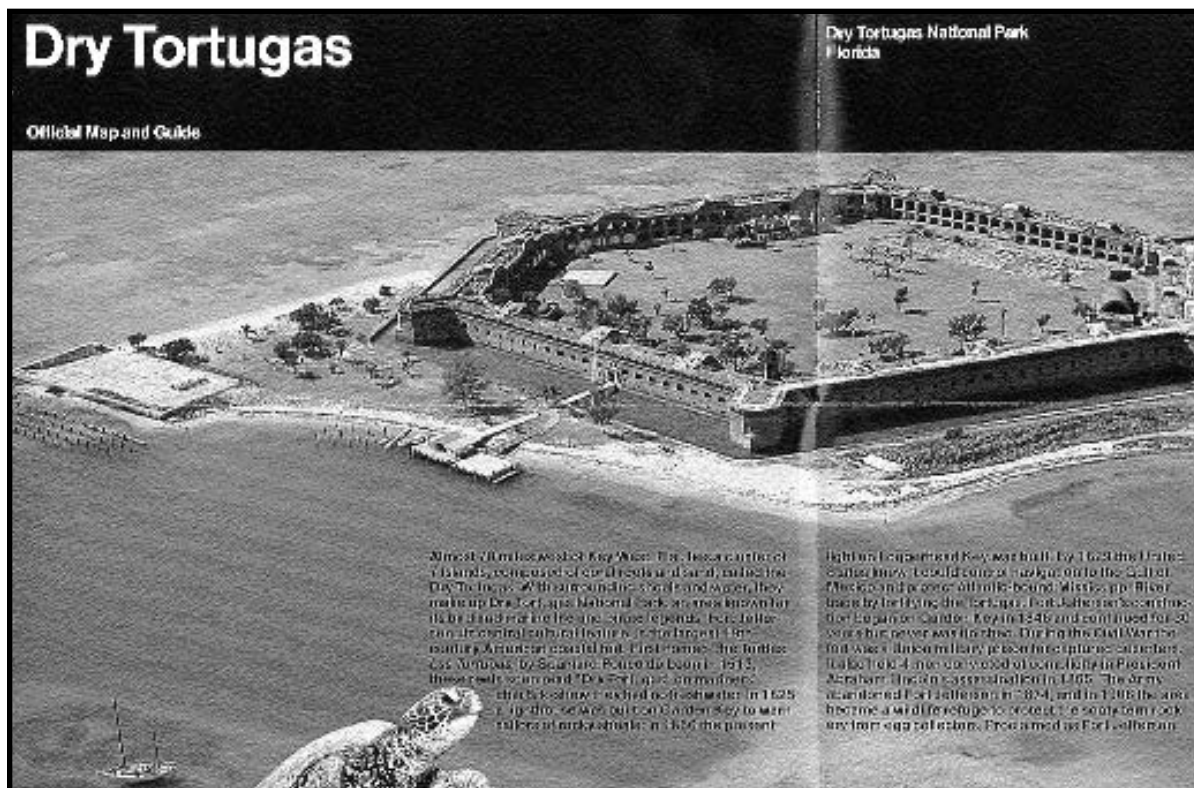
Harpers Ferry Center first developed a two-color mini-folder for Fort Jefferson National Monument in 1970. In 1981, HFC created the park's 4-color unigrid folder using the B-4 size (420 mm wide x 396 mm high) that has 16 panels, 8 on each side. In 1995—three years after Fort Jefferson National Monument became Dry Tortugas National Park—HFC re-designed the entire folder for the newly created national park.

The top of the current folder shows a full-format aerial photograph of Fort Jefferson. The remainder of side one has text, photographs of some wildlife found in the park, a small map of Garden Key and Fort Jefferson, and a photograph of archways inside Fort Jefferson.

The folder's back side contains a large map of the entire park and surrounding waters. Because the park is primarily water, the map's colors not only show the park's seven islands, but also three water depths (0-6 feet, 6-12 feet, and 12 feet and deeper) and underwater features such as wrecks, shoal areas, barrier reefs, and coral reefs and/or coral rubble.

With the completion of the new GMP Amendment in 2001, the park is now working with HFC to redesign the folder again to highlight new protection zone boundaries and updated regulations.

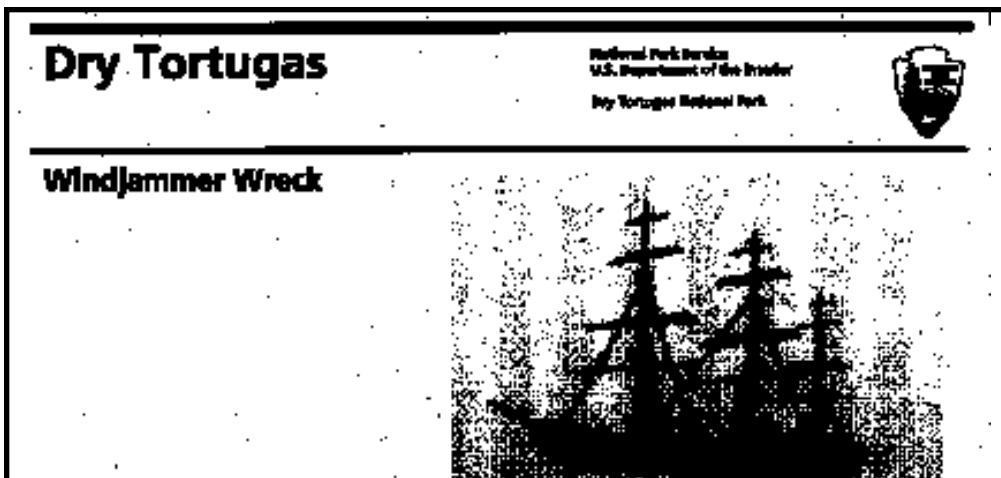
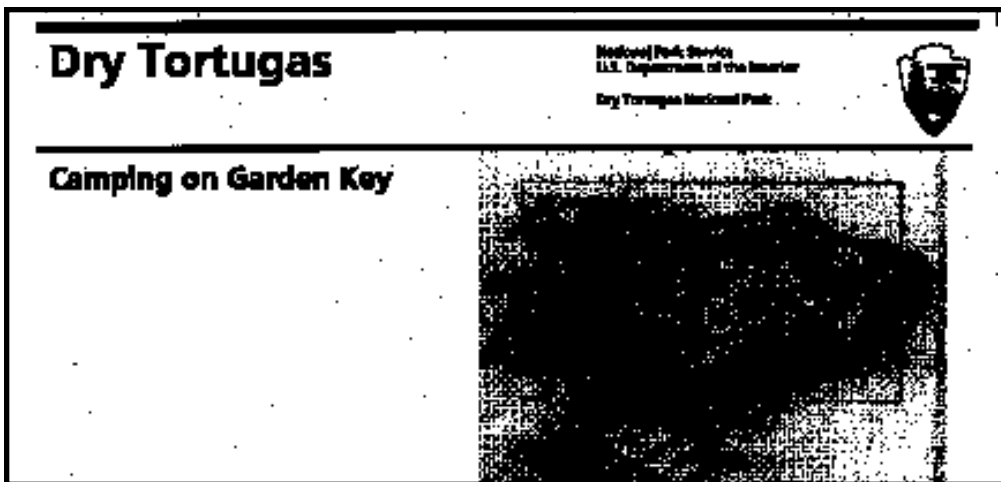
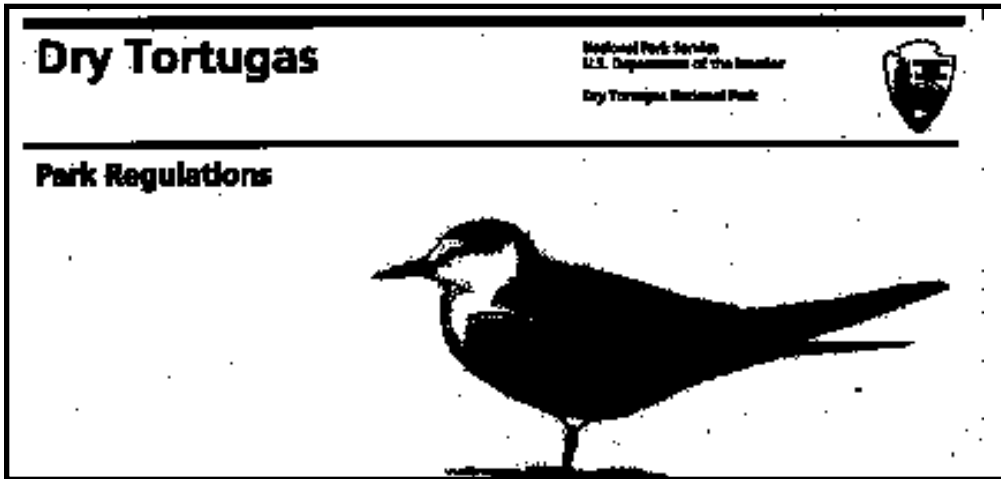
Cover for HFC's unigrid folder for Dry Tortugas National Park (below).



Media Conditions: Publications (continued)

Site Bulletins

From 2000-02, Dry Tortugas National Park's interpretive staff developed these Site Bulletins using the Unigrid format. All Site Bulletins should be reformatted to meet current NPS Message Project standards.



Interpretive Programs: Current Staffing

In FY 2002 the Interpretive staff at Dry Tortugas is:

<u>Position Title</u>	<u>Status</u>	<u>Grade</u>	<u>FTE</u>	<u>(Incumbent)</u>
Park Ranger	Permanent	GS-9	1.0	(Mike Ryan)
Park Ranger	Permanent	GS-9	1.0	(vacant)

Interpretive Programs: Personal Services

With the personnel listed on page 48, DRTO offers:	<u>Hours</u>	<u>FTEs</u>
* Fort Jefferson Vis. Cen. 8:00 a.m. - 7:00 p.m. daily (working in the FNPMA Bookstore)	350	.17
* Ranger Guided Programs (and preparation time)	450	.22
* Roving Interpretation:	1,585	.76
* Special Events (& prep time):	25	.01
* Education Programs (and preparation time)	50	.02
* Resource Preservation duties:	300	.14
* Reports such as VIP paperwork, MPU reports, etc.	200	.10
* Employee Training for Interpretive Devel. Program	150	.07
* Employee Leave (Annual Leave, Sick Leave, etc.)	200	.10
* Attending Meetings (and travel time)	300	.14
* Answering Visitor Inquiries	200	.10
* Developing Interpretive Media	350	.17
Total hours & FTEs needed for all Interpretive duties:	4,160	2.00
	hours	FTEs

Note: In addition to the personnel listed on page 48, there is a FNPMA cooperating association clerk who works every other week. On her off weeks, these duties are performed by the park's Admin. Technician. Also, interpretive staff from Everglades National Park support activities at Dry Tortugas National Park.

FUTURE INTERPRETIVE PROGRAM

FUTURE PROGRAM: PERSONAL SERVICES

Future Vision of Interp. Staff and Programs

This “Future Vision” section assumes that most visitors to Dry Tortugas NP will continue to receive personal services from individuals who are not NPS interpreters. Currently, the majority of personal services are provided by concession tour guides, primarily ferry-based guides. Although possibilities exist for an NPS interpreter to provide personal services while traveling aboard the ferry, the logistics involved in such a scenario would still likely preclude NPS interpreters from being the primary providers of personal services interpretation in the near future.

The future personal services program at Dry Tortugas NP will include:

* NPS interpreters will ensure high-quality, well-evaluated concession-provided personal services. This entails an interpretive staff regularly critiquing commercial services and training/coaching all concession guides. It will be important to develop successful working relationships with these individuals in order to encourage their professional development and the overall quality of concession-provided visitor services. Because this effort will require interpreters to regularly attend commercial guide programs, draft audits, and provide face-to-face guidance and support to guides, this responsibility will be time-consuming.

* NPS interpreters will continue to offer evening programs as conditions warrant (e.g., adequate nighttime visitation). These programs may include ‘candlelight’ fort tours and PowerPoint presentations that cover a range of cultural, historical, and natural history topics. Possibilities exist for other interpretive formats and programming, such as costumed interpretation, campfire programs, nighttime moat walks and others.

* NPS interpretive programs will include subjects and discussions key to significant park themes, but interpretation should also strive to infuse topics that have historically been under-represented. Examples include women's roles at Fort Jefferson, slave labor during the Fort's construction, and craftsmen and laborers of Irish and other ethnic descent.

* NPS interpreters should offer at least one natural history activity or program every day. Currently, most daytime visitors to Dry Tortugas NP receive a concession-led tour that generally centers on a few historical themes. A significant void exists for natural history interpretation and NPS-led personal services. Regularly scheduled natural history programs, such as guided moat/marine walks, would serve several critical purposes. These programs would introduce significant natural resource messages and provide more variety for the increasingly diverse park visitor. They would also help alleviate over-crowded tours and strains on park resources by helping better direct visitor traffic flows in the park.

Proposed Additional Staff

In order to accomplish the personal services “future vision” described on the previous page, additional positions are crucial. The current situation of two interpretive rangers (which means one interpreter per shift) results in the challenge of providing consistent and regular interpretive programs. Often pulled away for operational or other functions, the one interpretive ranger struggles to find the time necessary to prepare, develop, and provide adequate personal interpretive services.

Additionally, in the absence of this one interpreter, for training or other reasons, no other person is available in the park to provide informal and formal interpretation or to perform basic interpretive functions. Adding positions would bolster current interpretive efforts, and open the door for the possibility of regularly scheduled, perhaps even published (in a site bulletin or a bulletin case) ranger services and programs. Further, additional positions would enable the interpretive staff to devote more time to critiquing and helping to develop commercial guide services.

While the park's housing shortage presents real challenges in supporting additional positions, a creative approach involving housing in Key West, and a part-time residence on the island, may work. One or more employees could travel almost daily on ferries, providing critical ‘rove’ functions and interpretive programs on the boats. Also, the park may consider the possibility of rotating staff from the (future) Florida Keys Visitor Center in Key West into the positions stationed at Fort Jefferson.

(It should be noted that in FY 2003, one of the two interpretive positions in the park at that time was lapsed for the year. There were no available accommodations to house someone in the position at that time. The park used the salary to help develop plans and to seek approval to install prefabricated modular units that could slip into casemates. Until the critical housing shortage is resolved, there will be comparable staffing shortages in all divisions, including interpretation.)

In 2001, the park developed a Business Plan. The following shows current staffing levels and the programmatic deficits for interpretation:

<u>Position Title</u>	<u>Current FTE</u>	<u>Required FTE</u>	<u>Deficit</u>
Coop Assoc Coordination	0	0.25	0.25
Interpretation (includes VIP Program Mgmt.)	1.75	3.25	1.50
Visitor Center Operations (includes Key West Interagency VC)	0.25	2.50	2.25
Supervisor (to be located at Key West)	0	1.0	1.0
TOTAL	2.0	7.0	5.0

Concession Boats and Seaplanes

* **Tour Quality:** A primary concern about concessions' visitor services and programs is their quality, in terms of cultural and natural resource accuracy, and their ability to connect visitors to meanings within the park's resources. In 2002, Dry Tortugas NP interpreters evaluated individual guides and tours, and gave written audits and in-person coaching sessions. The practice of auditing commercial guide services at Dry Tortugas NP should become systematic so park rangers and concession guides develop successful professional relationships, and work toward the same goal of high-quality concessions' personal services.

* **Accurate Information:** Concession-provided personal services have suffered for lack of historical and natural history information for their guides. However, a "Handbook of Fort Jefferson" is being developed by Dry Tortugas NP interpreters for the commercial guides. Additionally, the public library in Key West serves as another source of Dry Tortugas NP and Fort Jefferson history. Interpretive staff should deposit and make available there a range of significant park documents and historical accounts including: GMP documents, enabling legislation, historic structure reports, historical fort construction documents, and natural history studies. Interpretive staff should work with commercial guides and provide them with accurate and relevant park resource information.

* **Resource Protection:** Commercial guide and visitor services should provide vital park resource protection messages. Currently most day-time visitors to Dry Tortugas NP, traveling on ferries, receive some park resource messages. Visitors receive this significant information usually via a guide over a PA system onboard the boat. Generally speaking, these messages are received in fragments or not at all. Personal interpretive services, especially hands-on learning, would better address important resource protection awareness regarding sensitive marine and historical resources. When issuing snorkel gear, for instance, guides could devote more time with individuals and families as they orient themselves to the gear and learn important underwater etiquette. With many first-time snorkelers entering the park's fragile marine resources, the need to demonstrate proper use and behaviors is critical. Daily 'roves,' in-water snorkeling demonstrations, and monitoring commercial guides would greatly improve the visitors' understanding and behavior in regard to resource preservation. The NPS should work with the ferry concession to develop and install non-personal (passive) resource orientation and protection messages on the ferries.

* **Restrooms:** Toilets are a critical amenity at Dry Tortugas NP. The park will require one ferry boat to stay moored at the Garden Key dock during its entire stay, and the ferry boat will offer the only restrooms during peak visitor hours. Before and after the ferry is on-site, composting toilets will be available for campers or others who might be on Garden Key.

Education Program

* An outreach education program could be developed and based out of the (future) interagency Florida Keys Visitor Center. An NPS interpretive position at this interagency visitor center in Key West could work, perhaps in concert with positions from the other government agencies, toward increasing public awareness of the park and its unique and fragile resources. A Dry Tortugas NP education program would be invaluable for enlightening and involving the local population of students and adults, especially considering some of the misconceptions and contentions that surround the Dry Tortugas and associated marine reserves.

* A distance learning program could be developed at Dry Tortugas NP; because of its remoteness, the park is an ideal candidate for this program. A variety of technologies could be explored to bring the rare resources of Dry Tortugas NP to local classrooms and libraries, and possibly to students throughout the country. "Parks-As-Classrooms" grants could be sought for developing a distance-education program. Channel Islands NP, through its innovative education video program, serves as a model for making remote and undiscovered marine resources and processes accessible to the public. Exploring such avenues is quite worthwhile, considering the need to gain support for the park's new GMP Amendment and to share the importance of the Dry Tortugas marine reserve—one of the largest in the world.

Special Events

Special events and related interpretive activities could be pursued at Dry Tortugas NP because of its wide range of natural, historical, and cultural park resources. But because of the park's unique location and the logistics involved in traveling to the park, special events should be planned with minimal logistic support from outside the park, and the expectation that many visitors will likely "stumble upon" these special interpretive events. Advertising for special events in Key West and via the ferry and seaplane businesses will be fundamental in attracting visitors and motivating them for these special interpretive opportunities.

The following are some possible special events, relevant to park resources and certainly worthy of public awareness:

* Civil War Living History Event: More than a million visitors annually attend Civil War living history events throughout the United States. Such events are an exciting way to introduce the general public to military and civilian life of an earlier age. Fort Jefferson offers an ideal backdrop for costumed interpretation, offering visitors a compelling glimpse into the past. Previous events in the park have been highly successful, despite the efforts required to transport participants and equipment. Having large numbers of participants is not crucial; groups of six to ten would offer many opportunities, yet keep the event manageable. Ideally, a wide range of historical groups could be portrayed, including prisoners, African American soldiers, women, children, and construction workers. Participants would be encouraged to bring any items necessary for creating a historically accurate encampment, including tents and camp gear. The typical event would last two to three days.

* Sooty Terns: Special programs, such as those featuring Sooty Terns, are recommended during the spring and summer months. The presence of such a rare and remarkable species offers several interpretive possibilities. The senior wildlife biologist at Everglades National Park, who has many years of experience researching the Dry Tortugas terns, could be a valuable component in a Sooty Tern special program.

* Nurse Sharks: Scientists researching the large number of nurse sharks in the Dry Tortugas' waters have been generous in sharing their time and knowledge in the form of public programs at Dry Tortugas National Park. Such programs are highly popular with park visitors. Future special events could be planned, relying heavily on the first-hand accounts and modern technology of the scientists. Residents of the Florida Keys and local enthusiasts might be encouraged to visit the park for such events. News releases could be provided to local media sources, such as the Key West *Citizen* and local radio stations.



Visitors (above) at Dry Tortugas National Park pause with a ranger along Fort Jefferson's seawall to observe coral, fish, and other marine life.

FUTURE PROGRAM: NON-PERSONAL SERVICES

Website:

Because of the park's remote location, the ability to provide a "virtual" understanding of the resource is an area where the interpretive program can be especially effective. The park's website provides an ideal opportunity to tell the natural and cultural stories in greater depth, as well as to display some of the many fragile items from the park's museum collection. This includes rare algae books, artifacts such as Dr. Mudd's walking stick, and first-person narrative accounts of life at the fort. The website could also be used to create virtual opportunities for children, perhaps by expanding on the notion of web-rangers, a national NPS program. Finally, many elements from the park's publications program can be added to the website, be it site bulletins, the park paper, or other elements that will assist visitors with planning their visits to the park.

Due to logistical realities and the fact that the park's internet connection is via satellite, it is probable that most of the website development and maintenance will have to be done from Everglades National Park. It is recommended that a "web-master" position be established to serve both parks, and that that employee accomplish the many tasks associated with developing and maintaining effective websites for both parks.

Publications:

Unigrid Brochure

A revised Unigrid brochure for Dry Tortugas National Park should reflect the ramifications of the GMP Amendment's rulemaking when that process is completed in 2003 or 2004. After these important park events occur, Harpers Ferry Center will convert Dry Tortugas NP's Unigrid brochure from mechanical format to digital format, revising it in the process. The new regulations resulting from the GMP Amendment's rulemaking will likely influence the role maps might play in expressing the various levels of protection afforded park waters.

Perhaps the map on the Unigrid brochure should showcase the park's historical and natural themes, and put the changeable information on the Research Natural Area (RNA) in the park newspaper and/or a site bulletin. Also, since 90% of the park's visitors spend 90% of their time on Garden Key, the map might include an enlargement of Garden Key.

Given the regional significance of the park's waters and islands—and how subject they are to regional impacts—it might be advantageous to map the region, not just the park area. Migratory birds, regional coral replenishment, regional nursery for marine species, and Mississippi River sediment impacts are stories that argue for mapping the region.

Regional mapping might not be possible, however, if too much cartographic detail is needed for showing the no-take and no-entry marine zones. But, if there is no sure way to get the brochure into the hands of independent boaters before they enter park waters, is there reason then to focus on such warnings in the Unigrid brochure?

The contents and approach of the Unigrid should be closely coordinated with the park newspaper for Dry Tortugas NP, the South Florida Parks newspaper (for EVER, BISC, BICY, DRTO) and the park's site bulletins. The contents and approach should also be very carefully positioned in terms of the distribution of the Unigrid. What will be the impact of the new multi-agency Interagency Key West Visitor Center?

Will ferry boat and flight concessioners distribute the brochure to all their passengers? If so, where and when? At present, it appears that most visitors to Dry Tortugas NP receive the Unigrid brochure, if at all, within the frantic last hour of their on-site visit, when they get into the bookstore/sales area before they must reboard the ferry boat to leave the park. This scenario suggests that information in the Unigrid brochure on orientation and safety/management, for example, is of no practical value. This scenario rather suggests that souvenir and other 'take-away' values should be the Unigrid's primary use and its strongest appeals.

Publications (continued):

Unigrid Brochure (continued)

The present Unigrid brochure emphasizes natural history more than human history. When this brochure was developed, staff at the park wanted the Unigrid to focus on the area as the newly redesignated Dry Tortugas National Park rather than largely focusing on Fort Jefferson, as did the previous Unigrid brochure. Careful consideration should be given to the question of thematic balance in a new brochure. Factors to consider might be the major patterns of visitor use on-site. If most visitors take a ranger-led tour of the fort, for example, what does this mean for the content of the brochure? And again, distribution looms as a question: where and when does the visitor get this Unigrid brochure?

Long-range constituency-building might be a factor to consider, too: What type of content will give the brochure the most persuasive take-home value for making the visitor (and his or her pass-along readership) a future supporter of Dry Tortugas NP and the National Park System?

However briefly, a revised Unigrid brochure should put the fort in its larger historical context of U.S. isolationism—as part of the Third System of post-1812 coastal fortifications—and give some flavor of the daily life of those soldiers and others who staffed the fort. It should also emphasize the regional—if not hemispheric—significance of the Dry Tortugas for the health of both marine and terrestrial life.

NPS Handbook

During the CIP workshop at Harpers Ferry on February 26-28, 2002, the workshop participants recommended that a “thematic” NPS handbook be developed on “Coral Reefs” that can be sold at Dry Tortugas National Park, Everglades National Park, Biscayne National Park, and Virgin Islands National Park. The ideal would be to develop a park-specific handbook for Dry Tortugas National Park which can give a holistic story of both the natural and cultural features of the park.

Site Bulletins

The wide range of natural and cultural resources at Dry Tortugas NP means there is enormous potential for site bulletins. Three site bulletins developed by interpretive staff are currently used: Park Regulations, Windjammer Wreck Site, and Camping on Garden Key. They address some of the most important issues in the park, and provide visitors with handy, concise answers to frequently asked questions. The site bulletins were developed on-site, and to date have been produced entirely on park computers and photocopying equipment.

Because park messages are constantly changing, on-site development is

Publications (continued):

Site Bulletins (continued)

important. Interpretive staff can modify and update site bulletins as needed. Ideally, however, site bulletins should not be printed on park equipment. A printing company could periodically print several thousand copies, thus producing a professional-looking product, while reducing wear and tear on park equipment.

All site bulletins will follow the standard NPS format (as set forth by the graphics identity program). There has been some discussion about converting three preexisting pamphlets, Birds of Dry Tortugas NP, Walking the Moat Wall, and A Guide to Plant and Animal Life, into updated site bulletins that share the same standard NPS site bulletin format.

The following are proposed Site Bulletins identified on staff workplans:

Fort Jefferson Stabilization - will help to explain current conditions and the crucial role of the ongoing multi-million dollar stabilization project.

Loggerhead Key - will describe cultural and natural features on this very prominent yet (for most visitors) largely inaccessible island.

Research in the Park - will describe how top researchers continually use this pristine environment to expand scientific knowledge; the Carnegie Lab and naturalists such as Audubon and Agassiz will be featured.

Sea Turtles - will address their habitat and interdependence, as well as recent research and protection efforts.

Bird Key Wreck - will provide information and a site map for one of the park's premier underwater sites.

Artillery - will provide basic information on Civil War-era artillery (types, capabilities, how heavy guns were moved and loaded, etc.).

Life at the Fort - will provide insight into the challenging conditions of life at Fort Jefferson for soldiers, prisoners, women, children, the enslaved, African American soldiers, and construction workers; will utilize a large collection of historic letters and diaries.

People of the Fort - a series of site bulletins could be developed on some of the better known (and ultimately, lesser known) people associated with the fort. These site bulletins could feature Mudd, Wright, some of the workers, perhaps the enslaved, etc. This would enable visitors to get a broader picture—the “what happened after they left the fort.” These publications would also be ideal for posting on the park’s website.

Lighthouses - a popular subject; will describe the three major lighthouses in Dry Tortugas history.

Providing site bulletins in three languages is also being considered to allow visitors access to English, Spanish, and German versions of each.

Publications (continued):

Rack Cards

Though not a high priority, the development of a park-produced rack card has been discussed by interpretive staff. The card would be provided to ferry and seaplane passengers as they purchase their tickets. As envisioned, it would accompany the park newspaper mentioned below. In clear, concise language, the rack card would convey approximately 12 important resource protection and visitor safety messages (such as 'stand in the sand, never stand on coral or seagrass'). The card would be geared toward introducing important messages; other media would then reinforce and more thoroughly explain the messages.

There are no plans to develop a rack card for promotional purposes. The park is already experiencing high levels of visitation; there is little need to solicit, promote, or actively invite additional visitors.

Park Newspaper

At least annually, a park-specific newspaper for Dry Tortugas National Park is published and distributed to ferry passengers, seaplane passengers, and other families and groups that visit the park. The first of these newspapers was developed in 2002 (cover is pictured below). For concession customers, the paper is distributed in Key West at the embarkation points. This allows the NPS to deliver information and resource messages that passengers can read on the 2½-hour trip to the park.

To augment the park newspaper, an annual travel planner for all four national parks in South Florida (Everglades NP, Biscayne NP, Dry Tortugas NP, and Big Cypress NP) is published to provide information to those planning to visit South Florida. During the busy winter season, an additional newspaper is developed that provides information for in-park visitors. Because Dry Tortugas National Park has its own publication, the winter newspaper will not contain information about this park.



Publications (continued):

Florida National Parks & Monuments Assoc. (FNPMA)

Considering its small size (approximately 200 square feet), the FNPMA Bookstore at Dry Tortugas NP enjoys a remarkably high volume of sales, grossing more than \$140,000 in 2002. There is currently a wide range of educational materials featuring books on nature, bird and fish identification, and military history. Other sales items include T-shirts, hats, film, navigational charts, postcards, pins, patches, and other thematic products. A desired future would ensure a continued emphasis on educational materials, supplemented by thematic and convenience items.

Any plans for updating park facilities must include an expanded bookstore area. There is currently not enough space, which adversely affects bookstore operations and compromises visitor experience (due to frequent overcrowding). One potential strategy would be to expand the bookstore into one full casemate, thus doubling the current space. If the park is able to implement some sort of audio tour, this facility will also serve as the rental and storage location for the audio units. Staffed by FNPMA employees, park staff, or volunteers, the bookstore could potentially take on an even greater role as a visitor contact station if the information desk is expanded. When this facility is designed, the FNPMA sales area needs to be able to be closed when short-staffed. Ideally, the desk would be staffed continuously 9:00 am to 4:00 pm daily, with a sales associate and an NPS staff member available during peak times and to allow lunch breaks without having to close the facility.

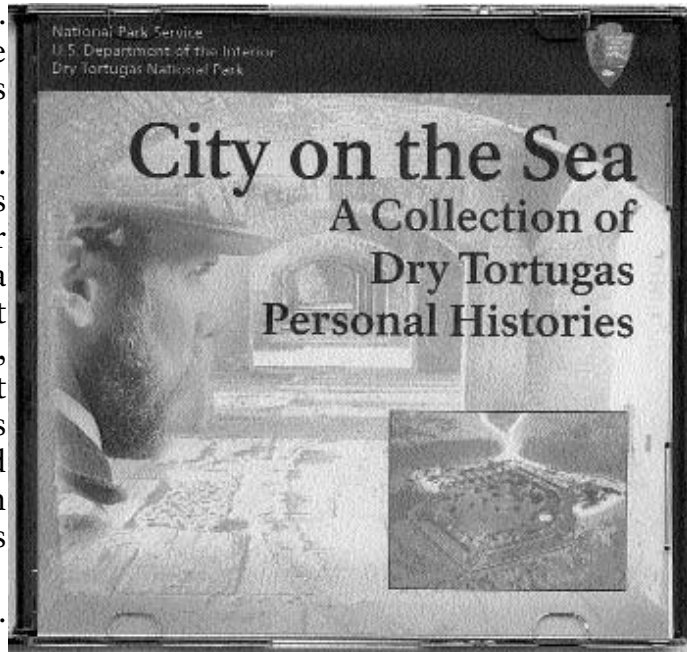
FNPMA staff and park staff are constantly searching for new materials for sale in the bookstore, especially books that describe the Dry Tortugas. Unfortunately, there are currently only two books that deal directly with the park and meet the criteria for accuracy and relevance. Albert Manucy's *Pages From the Past*, an illustrated history of Fort Jefferson (published by FNPMA, \$7.95), is the most frequently sold book. Though highly informative, it addresses only Fort Jefferson's history. There is no publication that provides an overview of all the park's cultural and natural resources. The addition of a HFC-produced handbook (or a FNPMA-produced handbook) on Dry Tortugas NP would clearly be the ultimate sales item. Such a colorful book could weave the cultural and natural stories into a single compelling source. Meanwhile, the park is exploring with KC Publications the possibility of producing a version of *Story Behind the Scenery* for Dry Tortugas National Park.

Visitors frequently request books that include copies of historic letters and diaries of people stationed at Fort Jefferson. Interpretive staff have identified this need for editing a collection of letters. Another possibility would be to edit and have published the diary of Emily Holder, the wife of the doctor stationed at Fort Jefferson in the 1850s and 1860s.

Publications (continued):

Florida National Parks & Monument Assoc. (continued)

A CD-ROM, *City on the Sea, a Collection of Dry Tortugas Personal Histories*, was recently developed by park staff. The disc contains more than 500 pages of historic letters, journals, reports and photos from Fort Jefferson. Distribution has been limited to approximately 25 per month due to the time and costs associated with producing the disc on site (burning files to a disc, printing labels and inserts, providing jewel case). Recipients include park staff, interested stakeholders, employees of the ferry companies who provide interpretation, and visitors who ask for this type of material. Development of the CD will continue as new materials are discovered and added. *City on the Sea* has high potential for development into a FNPMA sales item. It would be a compact, affordable product providing park visitors with an unparalleled opportunity to learn about the conditions and diverse communities at Fort Jefferson.



The park staff may also develop plastic "dive cards" for two wreck sites that have been deemed appropriate to open to the public for interpretive and recreational purposes. One side of these dive cards would show a plan view of the ship along with object identification. The other side would include a brief history of the ship and the story of the wreck, along with resource preservation and safety messages.

FNPMA at the Florida Keys Visitor Center at Key West

This (future) Florida Keys Visitor Center in Key West will offer another FNPMA venue where published interpretive materials and products can be sold. Plans for the proposed facility call for a 300- to 600-sq.-ft. store. The facility's plans call for a store similar to The Nature Company stores, offering publications, thematic toys, and other products that represent park resources. Proceeds from the facility's store will be used to support interpretive and educational programs at this visitor center.

A "Scope of Sales Statement" should be done for both sales areas to ensure that products meet park-specific and resource-specific themes.

Wayside Exhibits:

Key West and Garden Key's Snorkel Trail and Moat Walk

Wayside exhibits present visitors with a self-guiding option for understanding the resources at Dry Tortugas NP. However, wayside exhibits are not the only self-guiding option. During the LRIP Workshop held at Harpers Ferry in February 2002, the workshop participants discussed developing a self-guiding publication and/or an audio tape program.

In April 2002, HFC's Senior Wayside Exhibit Planner Dick Hoffman and Senior Wayside Designer Betsy Ehrlich traveled to the park to initiate planning for future wayside exhibits for Dry Tortugas NP. They worked with the park staff on the concept of a snorkel trail and—for those visitors who choose not to snorkel—waysides along the moat walk trail to identify natural features. Inside Fort Jefferson, about ten wayside exhibits (and directional signs) will provide a self-guiding tour option of the fort's major features; additional waysides will explain other features. Other waysides will be around Garden Key, Loggerhead Key, and the Windjammer Wreck site to provide site-specific interpretation.

The following list comes from the draft Wayside Exhibit Proposal that the HFC media specialists wrote based on their park visit in April 2002:

<u>No.</u>	<u>Subject</u>	<u>Location</u>	<u>Size</u>
1	Orient. to Dry Tortugas NP	Ferry Dock in Key West (and at seaplane desk in Key West)	36x48
2	Orient. to Garden Key	Garden Key dock ramp	36x48
3	Coral Reef	Garden Key campground	36x24
4	Sea Grass	Garden Key campground	42x24
5	Snorkel Trail and Moat Walk	Garden Key campground	42x24
6	Sea Grass	Snorkel Trail	custom
7	Corals, hard and soft	Snorkel Trail	custom
8	Gray snapper	Snorkel Trail	custom
9	Parrotfish & Sergeant major	Snorkel Trail	custom
10	Barracuda and Needlefish	Snorkel Trail	custom
11	Sea urchin and spiny lobster	Snorkel Trail	custom
12	"Jumble of Bricks"	Snorkel Trail	custom
13	Seabiscuit & Christmastree worm	Snorkel Trail	custom
14	Cocoa damselfish	Snorkel Trail	custom
15	Sea cucumber	Moat Walk	t.b.d.
16	Conch	Moat Walk	t.b.d.
17	Gray Snapper	Moat Walk	t.b.d.

Wayside Exhibits (continued):

Garden Key and Fort Jefferson

<u>No.</u>	<u>Subject</u>	<u>Location</u>	<u>Size</u>
18	Sea grass	Moat Walk	t.b.d.
19	Soft corals	Moat Walk	t.b.d.
20	Blue tang and Sergeant major	Moat Walk	t.b.d.
21	Nurse shark	Moat Walk	t.b.d.
22	Hard corals	Moat Walk	t.b.d.
23	Needlefish	Moat Walk	t.b.d.
24	Halimeda	Moat Walk	t.b.d.
25	Burrowing worms	Moat Walk	t.b.d.
26	Bioluminescence	Moat Walk	t.b.d.
27	Upside - down jellyfish	Moat Walk	t.b.d.
28	Outer Fort Wall	Garden Key - near moat	36x24.
29	Dynamic Keys	Garden Key - land bridge	36x24
30	Frigate Birds	Garden Key - land bridge	36x24
31	Nesting site (closed)	Garden Key - land bridge	36x24
32	Nesting site (partially open)	Garden Key - land bridge	36x24
33	Coaling Dock	Garden Key - brick ramp	36x24
34	Gateway to the Gulf	Garden Key - dockhouse	36x48
35	Park and marine sanctuary	Garden Key - dockhouse	36x48
36	Island Life	Garden Key - dockhouse	36x48
37	Bulletin Case	Garden Key - dockhouse	36x48
38	City on the Sea	Fort Jefferson	42x24
39	Touring Fort Jefferson	Fort Jefferson	36x24
40	Gun rooms	Fort Jefferson	30x20
41	Fort tour route	Fort Jefferson	30x20
42	Water in the Dry Tortugas	Fort Jefferson	30x20
43	Bastions	Fort Jefferson	30x20
44	Bastion Powder Magazine	Fort Jefferson	30x20
45	Soldiers' barracks	Fort Jefferson	30x20
46	"Every Square Inch"	Fort Jefferson	30x20
47	Dr. Mudd's Cell	Fort Jefferson	30x20
48	Tortugas Lighthouses	Fort Jefferson	30x20
49	Rodman Gun	Fort Jefferson	5x11
50	Control'g the Shipping Lanes	Fort Jefferson	36x24

Wayside Exhibits (continued):

Loggerhead Key and the Windjammer wreck

<u>No.</u>	<u>Subject</u>	<u>Location</u>	<u>Size</u>
51	Parrott Rifle	Fort Jefferson	30x20
52	Traverse Magazine	Fort Jefferson	30x20
53	Deepwater harbor	Fort Jefferson	30x20
54	Freshwater collection system	Fort Jefferson	30x20
55	Parade Ground Panorama	Fort Jefferson	30x20
56	Big (Detached) Magazine	Fort Jefferson	30x20
57	Powder Magazine Design	Fort Jefferson	30x20
58	Hot shot furnace	Fort Jefferson	30x20
59	Officer's Quarters	Fort Jefferson	30x20
60	Bakery	Fort Jefferson	30x20
61	Orient. to Loggerhead Key	Loggerhead Key	42x24
62	Dry Tortugas Shiptrap	Loggerhead Key	42x24
63	Underwater laboratory	Loggerhead Key	42x24
64	Windjammer wreck	Windjammer wreck	custom

NOTE: The list above and on the previous two pages is from the draft Wayside Exhibit Proposal; the number of wayside exhibits on this list, or their subjects, locations, and sizes may change during its review process.

Interagency Visitor Center at Key West

As planning develops for the (future) interagency Florida Keys Visitor Center in Key West over the next few years, a separate Wayside Exhibit Proposal for orientation panels outside this facility may need to be added to this section. This second proposal may include duplicate panels of some of those listed in Dry Tortugas NP's parkwide Wayside Exhibit Proposal (e.g., Exhibit #1: Orientation to Dry Tortugas NP); however, because of the tri-agency cooperative relationship of this interagency visitor center, new wayside panels may need to be designed that are more regional in scope.

Exhibits:

Fort Jefferson Visitor Center

* Exhibit Location: within four casemates of Fort Jefferson

* Approximate Size: 990 square feet

* Visitors per Year: approximately 100,000 (88,674 in 2001)

* Evaluation: The current visitor center (within two casemates of Fort Jefferson adjacent to the sally port) has multiple functions. A small display area (approximately 350 square feet) of artifacts with limited cultural context also acts as the exhibit lobby. The information desk and bookstore (approximately 200 square feet) are behind this space and through an archway. A multipurpose education/interactive space and audiovisual room in the second casemate (approximately 500 square feet) provide an introduction to the park and the natural history context.

* Recommendations:

The park intends to relocate the current visitor center space from the east side of the sally port to the west side, and to expand the visitor center space from two casemates to three, all of which will be climate-controlled. The total area will be under 1500 square feet (495 sf/casemate), particularly if slip-in units are used. Two additional casemates to the west of the visitor center will shelter artillery exhibits that, like those adjacent to the visitor center, will not be part of the visitor center itself. Space within the climate-controlled casemates will include the visitor desk, bookstore, exhibits, staff offices, and storage. Two casemates will hold the exhibit area, and one casemate will hold the FNPMA sales area and storage/office; the FNPMA sales area needs to be designed so that it can be closed off during times the exhibit area is open, but unstaffed.

The exhibit area in the expanded visitor center will present all of the park's themes, with particular emphasis on integrating the human story with technology and natural history. The park's location within major shipping lanes and as a deepwater access area are central components from which themes can be linked. The exhibits will provide varied layers of complexity to engage visitors regardless of age or learning style.

Space is needed for temporary exhibits to interpret the ongoing restoration and preservation efforts at Fort Jefferson over the next few years.

* Exhibit Issues:

Space Treatment:

Expansion of the visitor center space may be accomplished by relocating it from the east side of the sallyport to the west side, and installing prefabricated inserts into three casemates. Also being considered is simply closing in the casemate. Operational costs for electrical requirements will impact this decision. This decision will be instrumental in

Exhibits (continued):

Fort Jefferson Visitor Center (continued)

*** Exhibit Issues (continued):**

Space Treatment (continued):

determining what level of environmental controls the expanded visitor center space will attain, as well as the ability to display certain types of objects in the exhibits. Because of climate control challenges and costs, it may or may not be feasible to display museum objects according to NPS policy. However, every effort will be made to meet these standards, and if they cannot be achieved, that reality may drive what artifacts (and fabric choices for indoor or outdoor exhibits), if any, are displayed.

Space Function:

The future visitor center will contain the information desk, bookstore (including storage and administrative space), exhibits, audiovisual room, interpretive office, and storage space.

Program Impact:

A significant majority of park visitation is directly related to concessionaire's schedules for boat arrival and departures. These day-use visitors receive a concession-led tour of the fort, lunch, and the opportunity to snorkel. Visits to the existing visitor center are sporadic as they are not part of the current tours led by concession or NPS employees. An expanded visitor center can provide viable, experiential options (such as a 10-minute film and 15-20 minute exhibit experience) to visitors. These options, along with self-guiding tours (possibly audio) of the site could reduce the number of visitors that take the concession-led tours of the fort, as the impact of these large group tours on the resource is of increasing concern. The park is seriously considering the development of an audio tour program, much like that offered at the Alcatraz Island unit of Golden Gate NRA. Infrastructure associated with that audio tour such as unit rental, recharge, and storage will occur on site from the FNPMA bookstore and in Key West at the ferry, and airplane terminals.

Exhibits (continued):

Fort Jefferson Locational Exhibits

A greater emphasis on exterior and locational exhibits is planned for Fort Jefferson. The goal is for park visitors to learn about the history and significance of Fort Jefferson by exploring and observing features first hand, rather than relying entirely on indoor museum exhibits. This style of interpretation will place visitors *inside* the resource, where they can better appreciate the messages being told. The use of outdoor exhibits will also help to reduce energy needs, a crucial factor at Fort Jefferson, since the requirement for climate-controlled space can be minimized.

Casemate/Rodman exhibit: As visitors emerge from the new Visitor Center and begin the "essential fort tour," a pair of proposed fiberglass reproduction 10-inch Rodmans will be mounted in nearby casemates. The goal is to recreate a memorable glimpse of how the fort once appeared, with rows of powerful cannon framed by expertly crafted arches. A Rodman exhibit would also be crucial for helping visitors to better understand the fort's most basic components, such as the casemate and the embrasure. The exhibit can highlight the technology of large seacoast cannons, complemented by the manpower requirements and skills involved in serving heavy cannon.

Totten Shutters: During the construction of Fort Jefferson, protective iron shutters were installed within each of the fort's cannon openings, or embrasures, along the bottom tier. Developed in the United States in 1857, these innovative shutters were used in numerous American coastal forts. Their purpose was to protect cannon crews inside the gun rooms from enemy fire (specifically from shell fragments, small arms fire, and other smaller ordnance). The harsh salt-air environment of the Tortugas, however, caused the shutters and supporting ironwork to severely corrode over time. Not only is this corrosion unsightly, it has also led to the widespread loss of historic fabric. A major component of the fort's ongoing stabilization is to remove the deteriorating Totten shutters and embrasures, and repair the damaged brick.

As of 2003, 45 of 147 Totten shutters and embrasures have been removed. Rather than use iron replacements, which would eventually corrode and again require removal, the park has used brick to create a representative cannon opening. During discussions with the SHPO in 2003, it was agreed that fiberglass reproductions of Totten shutters and embrasures would create a much more accurate appearance. It is the SHPO's position that the reproductions should be used wherever original shutters are removed. Funding will be requested beginning in FY05 to purchase and install shutters on all 147 impacted embrasures. If funding shortages limit this number, it is recommended that the 25 embrasures on Front 1 and on adjoining bastions receive top priority.

Exhibits (continued):

Fort Jefferson Locational Exhibits

Totten Shutters (continued):

Front 1 was selected because it includes the fort entrance and overlooks the dock, making it by far the most visible side of the six- sided fort.

Though there is no known SHPO requirement that the shutters must be interpreted (to mitigate removal of original shutters), the park strongly agrees that these important features should be interpreted. From a technological standpoint, they are the yardstick by which other eras of coastal defense are measured. The shutters are also important because of their impact on the fort. A true understanding of the ongoing stabilization efforts is impossible without some knowledge of the shutter systems. Though the current stabilization will probably last less than ten years, the message is valid indefinitely. An exhibit that includes before and after images of an embrasure being stabilized would be one effective way of communicating this story (though such an exhibit may be better suited for an indoor museum panel).

Arguably the best location for interpreting the significance of the Totten shutters is within the proposed "Rodman" exhibit on the first tier. An interpretive panel could include a schematic (from above) that illustrates how the shutters functioned; a cut -away drawing could show how the ironwork, which included 2,000-pound iron support jambs on either side of the embrasure, was embedded in the surrounding brickwork.

Lighting within the casemate interiors is provided by sunlight. While this is generally sufficient for displaying interpretive panels and for visitor safety, special conditions exist inside the bastions. These areas tend to be darker and rely heavily on sunlight entering the embrasures. Reproduction shutters placed inside the bastions should therefore be installed in the open position. Within all other casemates there is a sufficient amount of sunlight entering from the large opening at the rear of the each casemate. It would be helpful for visitors, however, to see examples of both open and closed shutters for comparison. Open shutters would also provide interesting views into the moat and surrounding waters. Prior to development and installation of reproduction shutters, the park should consult with the vendor to determine if the shutters can be opened or closed by park staff, or if they will be permanently fixed.

Bat Cave: The "Bat Cave" refers to a historic powder magazine that is currently used for storage and the park library. This large Curtain Magazine was designed for a normal capacity of 860 barrels of gunpowder, or 43 tons. The term "Curtain" refers to the magazine's location within a curtain, or main wall of the fort. Fort Jefferson featured four Curtain Magazines, one along each long front of the bottom tier. They

Exhibits (continued):

Fort Jefferson Locational Exhibits

Bat Cave (continued):

were the largest magazines in use at the fort.

Powder storage is one of the more important topics related to Fort Jefferson's use. Due to its size, location, and intended role, the fort required unusually large quantities of powder. Because of its isolated position, the fort could potentially be cut off from supplies by an attacking fleet. On other occasions the fort would be required to serve as a supply base for visiting warships. Storing gunpowder and materials was thus a key component of the fort's design and history.

Though their contents have long since been removed, these magazines offer visitors the chance to better understand the hazards, fears, and techniques of handling gunpowder. Their interiors also contain interesting architectural details that demonstrate the skills of the artisans who built the fort. None of these rooms, however, are currently open to the public, primarily due to dark and unsafe conditions within their interiors.

The "Bat Cave" occupies a prominent, high traffic area just inside the fort. As part of a larger goal of relocating modern administrative functions to other less-visible sections of the fort, it has been suggested that the "Bat Cave" and the adjacent Park Headquarters be removed from this area. Both could then be converted into important interpretive areas incorporating a range of panels, displays, and historic furnishings. They could easily be integrated into the proposed "essential fort tour" route. Electricity is already available for lighting; little or no climate control would be required.

Compliance must first be obtained and appropriate repairs (primarily to the wooden floor) completed. Termite infestation should also be addressed. An exhibit panel inside the room could weave the technological and structural details of the magazine with human interaction topics, such as storage procedures and activities. Historic furnishings, including reproduction powder barrels and tools, could help to bring this important story to life. Some visible modifications were completed in the magazine in the 1870s to increase the thickness of the outer wall from approximately eight feet to twelve feet. These modifications can be interpreted as an effort to modernize Fort Jefferson after the development of powerful rifled artillery during the Civil War.

Tower Magazine: Fort Jefferson featured 32 powder magazines strategically located on all three levels. This was the highest total of any American fort. There were also five larger detached magazines planned for the parade ground; only two were begun, both were never finished.

Exhibits (continued):

Fort Jefferson Locational Exhibits

Tower Magazine (continued):

Twelve of the fort's 32 internal magazines were Tower Magazines. Each Tower Magazine had a normal capacity of 200 barrels of gunpowder, or approximately 10 tons. The term "tower" refers to the "perpendicular" architectural style used in taller American forts like Fort Jefferson.

The park proposes to open one of the Tower Magazines on the first tier to provide visitor access to a second (and very different) type of powder magazine. Visitors will be able to compare and contrast the two magazines, and some of the more important messages can be reinforced or elaborated upon. The interior of the Tower Magazines are more complete, allowing visitors to see surviving wood work once used for created air spaces (for keeping powder dry). Again, a variety of exhibits and furnishing can be used.

Either the magazine in Bastion 1 or Bastion 6 (the lighthouse bastion) can be used. Both have access to electricity, and both are located within the current tour route and the proposed "essential fort tour" route.

Guardhouse/Provost Office: The casemate just inside the fort's entrance was historically used as the Guardhouse and Provost Office. The park proposes to remove the Park Headquarters and convert this casemate into an interpretive area. Interpretive panels and furnishings, in conjunction with architectural features, could highlight the workings of this once important "nerve center."

Guardhouses were common in military installations. At Fort Jefferson, the person in charge of guard details, including the 24-hour security of the fort, was located here. The Provost, or military police, also worked from this office. Many daily activities, including prisoner supervision, routine correspondence, and record keeping, were controlled or monitored from this area. Desks, chairs, bunks, writing materials, clothing articles, maps, and military accoutrements were some of the many items found in such areas. Within the Guardhouse are two holding cells, or "dark cells," for prisoners. It is speculated that Dr. Samuel Mudd may have occupied one of these cells in 1865. Along one wall of the Guardhouse are loopholes used for musketry. The loopholes can be interpreted as part of the fort's drawbridge/sally port defense system, an interesting feature which is currently not described in park exhibits.

24-pounder flank defense howitzer: The park recommends that a flank defense howitzer exhibit be placed inside Bastion 1 along the "essential fort tour" route. The exhibit could mention the significance and purpose of flank defense howitzers, graphically link the story to other fort

Exhibits (continued):

Fort Jefferson Locational Exhibits

24-pounder flank defense howitzer (continued):

features (such as the moat and the bastions), and describe basic howitzer characteristics (range, weight, number of crewmembers, types of projectiles, rate of fire, etc.). Flank defense howitzers were an important component of Fort Jefferson's design and security; 71 flank howitzers were planned- the highest number for any American fort.

The howitzer exhibit would complement the "Rodman" exhibit by providing a second (very different) armament example. Reproduction exhibit items, such as examples of ammunition and implements, could be incorporated, but some would have to be firmly attached or secured. A "then and now" perspective is possible since a historic photo is available showing a flank howitzer mounted directly outside the traditional "Mudd Cell" in Bastion 1. Conservation of the park's historic howitzer and slide carriage chassis is recommended.

Mudd Cell: Dr. Samuel Mudd spent most of his incarceration in the casemate directly above the sallyport. Five historically important prisoners were kept within this casemate, including four Lincoln Conspirators (Mudd, Sam Arnold, Michael O'Laughlin, and Ned Spangler) and a political prisoner, George St. Leger Grenfell. From an interpretive standpoint, a locational exhibit is probably not warranted. A wayside exhibit could include images of these men, and use the prisoner's own words to describe the conditions at the fort. Direct links to their imprisonment should be highlighted, such as the holes carved in the floor to help remove pooling rainwater (these features may require protection from prolonged visitor impacts and traffic).

NCO Quarters: The park has recommended relocating the modern park housing unit on the second tier of Front 1 and converting these two casemates into an interpretive area on the proposed "essential fort tour" route. Exterior photos from the 1860s confirm some type of historic use. It is possible that this was the quarters for a senior non-commissioned officer and his family. Without definitive proof, the park may choose to exhibit this as only an example of NCO living quarters at a coastal fort during the 1860s. Reproductions of period clothing, furniture, and household goods could help to illustrate the daily conditions at a remote military outpost.

Enlisted Mens/Prisoners Quarters: To better appreciate the living conditions at the fort, there is a strong need for providing a representative example of military quarters. The fort's enlisted barracks, officers quarters, and other wooden buildings used as temporary quarters no longer exist. Many of the soldiers and prisoners, however, were quart -

Exhibits (continued):

Fort Jefferson Locational Exhibits

Enlisted Mens/Prisoners Quarters (continued):

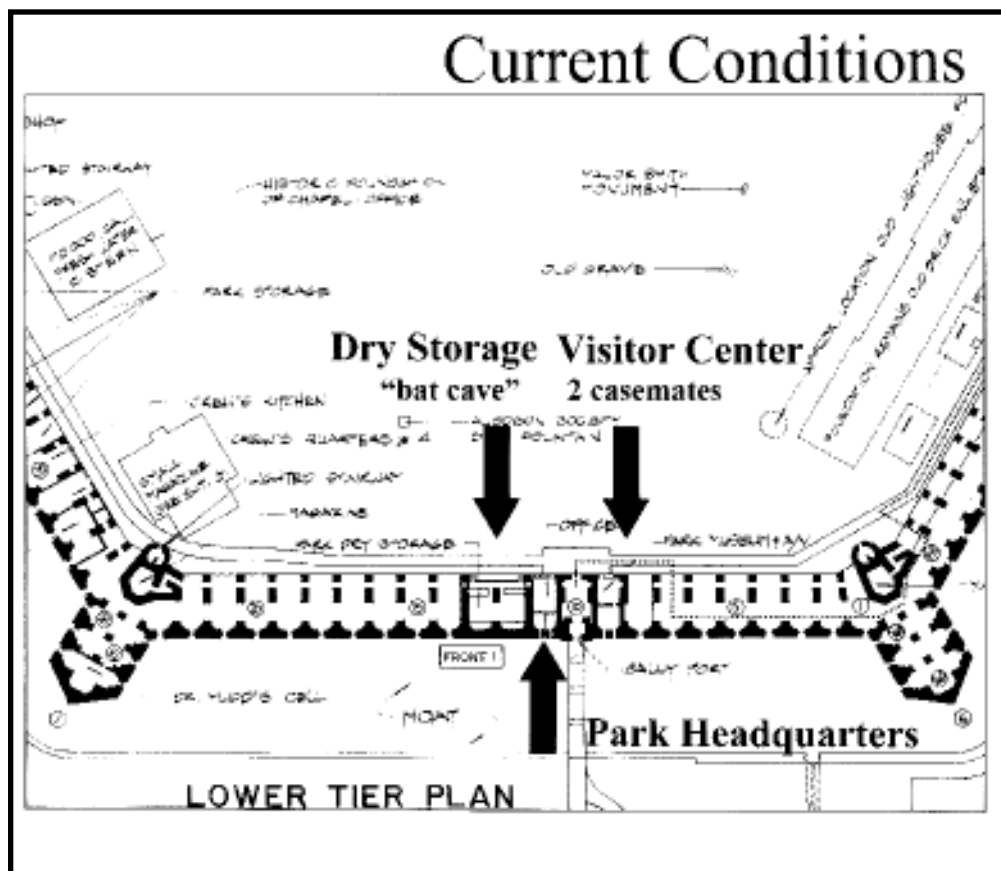
ered within vacant casemates, especially on the 2nd tier. A suggestion has been made to recreate some of these living spaces for interpretive purposes. Wooden enclosures could be used in one or more casemates of the 2nd tier of Front 1. Furnishings would be basic: wooden bunk beds and equipment racks.

Cistern: Water is a universal theme at Fort Jefferson and Dry Tortugas NP. The efforts to collect rainwater illustrate the innovations and technology of the fort. The fort's subsidence and the resulting problems with water collection are examples of how careful planning could not always overcome nature. The subsequent shortages of fresh water underscore the hardships endured by the fort's garrison. The park proposes to include a cistern exhibit for the Dry Tortugas within one of the casemates near the Rodman exhibit on Front 1. Historic filter closets and cistern manholes are present in most of the fort's casemates. The creative use of electrical backlighting and plexiglas within the cistern openings has been considered.

15-inch Rodman: Perhaps the ultimate interpretive opportunity for Fort Jefferson is to remount one of the impressive 25-ton cannons on the terreplein. The 15-inch Rodman represents the apex of muzzle loading artillery in the United States. Yet the only way for visitors to appreciate the mammoth size and sophistication of this cannon is to return it to its original height and appearance on a reproduction carriage. The park is fortunate to possess six 15-inch Rodmans, the largest collection of its kind in existence. If only one of these could be properly displayed, it would leave a lasting impression on all park visitors.

* Current Conditions:

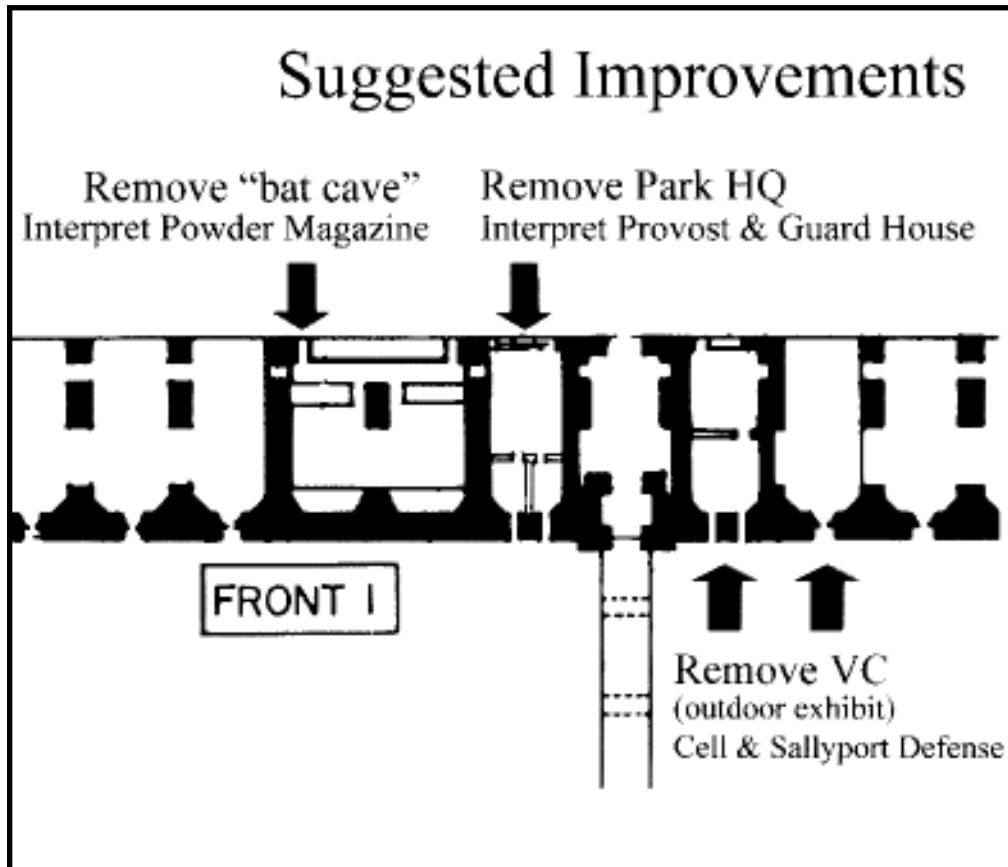
Below are the current (2003) locations of the park headquarters, visitor center, and dry storage area within Fort Jefferson.



Fort Jefferson Recommended Changes (continued)

* Suggested Improvements:

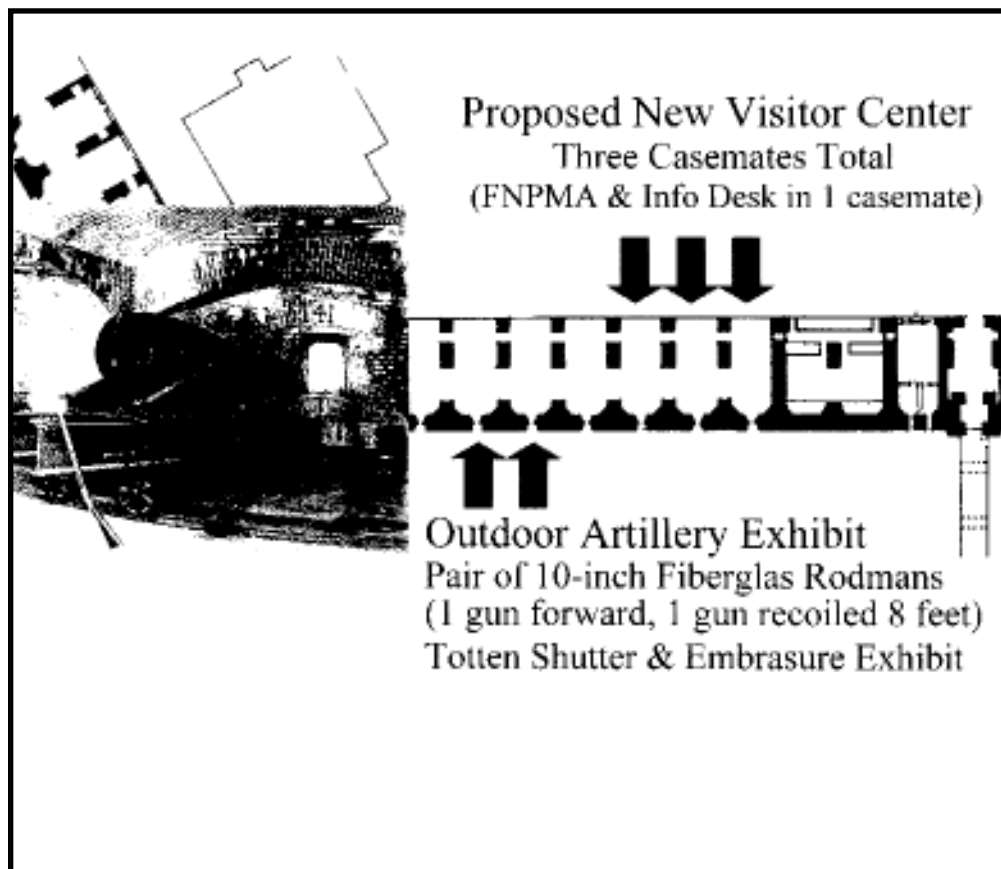
Below are the suggested removal recommendations of the park headquarters, visitor center, and dry storage area, along with the interpretive opportunities for these spaces within Fort Jefferson. A proposed location for the visitor center and storage area has not been finalized.



Fort Jefferson Recommended Changes (continued)

*** Proposed Location for New Visitor Center:**

Below are the suggested locations for the new (future) visitor center and outdoor artillery exhibit, both to be located to the left (southwest) of the sally port entrance to Fort Jefferson.

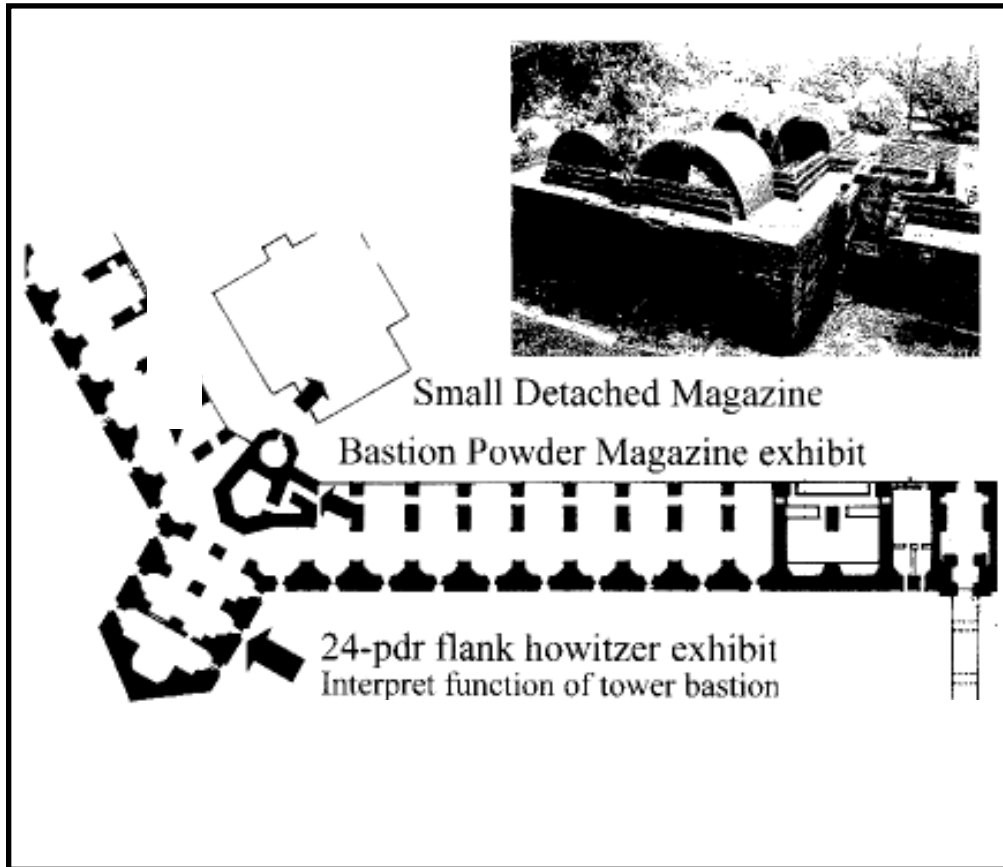


Note: Visitors will exit the visitor center and begin their self-guiding tour from the side of the casemate, not the rear. As they leave the modern environment of the visitor center, this first view should be memorable. Emerging into this semi-dark environment, visitors will look straight down a row of casemates, interrupted by nothing other than the Rodman cannons. The combination of the cannons and the symmetry of the arches will no doubt be a compelling way to start the tour. The Rodmans will be located about two or three casemates away. With this large mounted cannon, a variety of 20-minute interpretive talks that focus on or at least incorporate the Rodman can be offered.

Fort Jefferson Recommended Changes (continued)

* Proposed locations: Bastion Powder magazine and Howitzer exhibits:

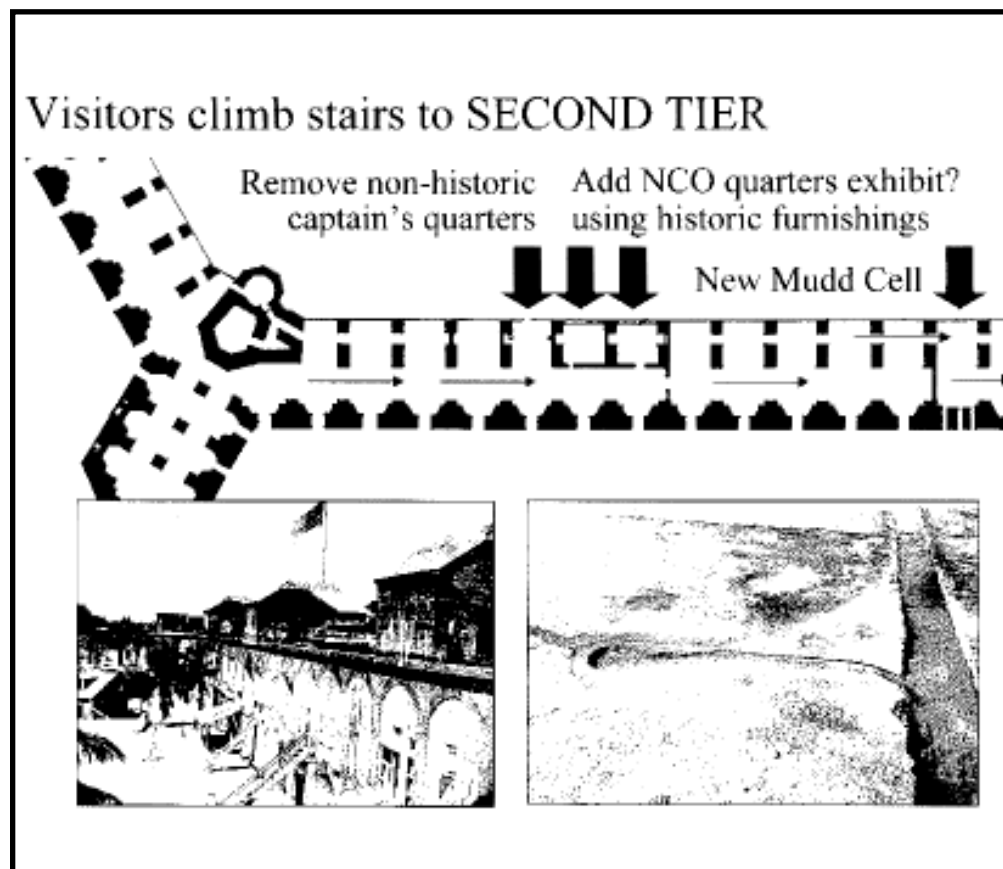
Below are the suggested locations for the Bastion Powder magazine exhibit and 24-pounder flank howitzer exhibit to be located to the left (southwest) of the fort's sally port. The howitzer and the slide carriages are a part of the park's museum collection.



Fort Jefferson Recommended Changes (continued)

* Proposed Location for NCO Quarters Exhibit and Mudd Cell:

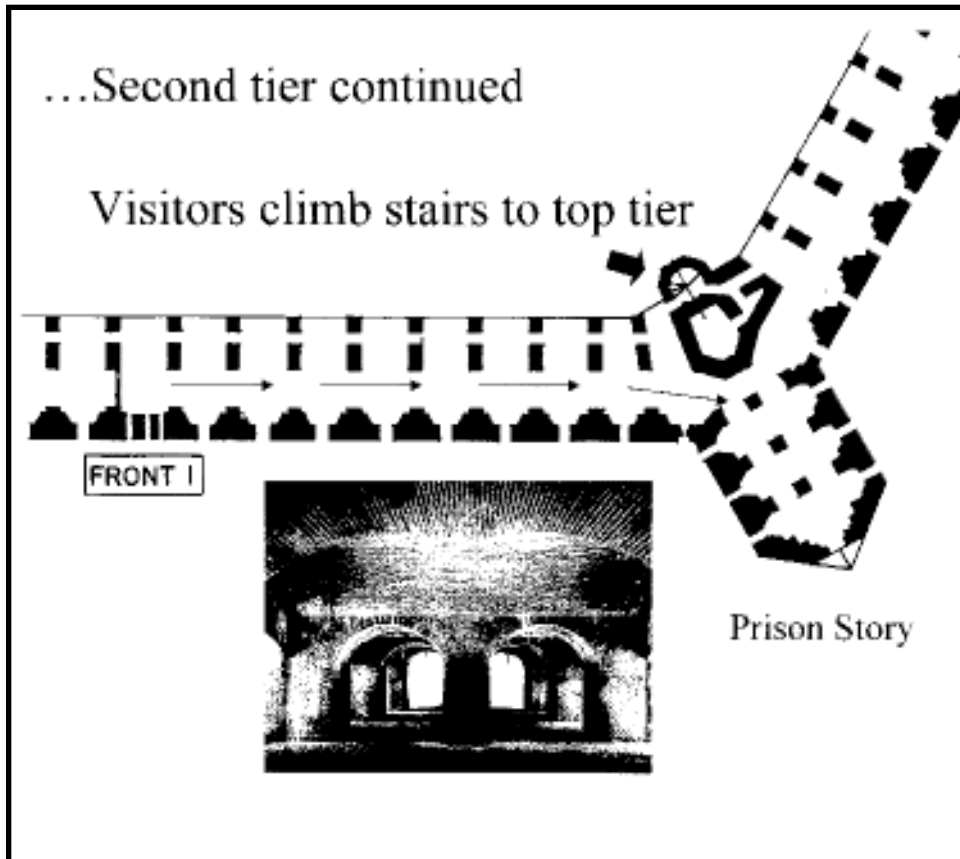
Below are the suggested locations for a new (future) exhibit in the NCO quarters, and accurate location of Dr. Samuel Mudd's cell located on the second tier of Fort Jefferson, to the left of and above the fort's sally port.



Fort Jefferson Recommended Changes (continued)

* Proposed Route to the Top Tier of Fort Jefferson:


Below is the suggested (future) route for visitors through the second tier's casemates to the stairway to Fort Jefferson's top tier, where an exhibit on the Prison Story will be located.



Fort Jefferson Recommended Changes (continued)

* Proposed Location for End of the 'Essential Fort Tour:'

Below is the suggested end of the "Essential Fort Tour" route for visitors, and the location of new (future) exhibits on the Lighthouse, Rodman cannon, other nearby islands, and the park's natural history.



Top of Lighthouse Bastion

Lighthouse story
Rodman cannon story
Identify other islands
Intro to natural history

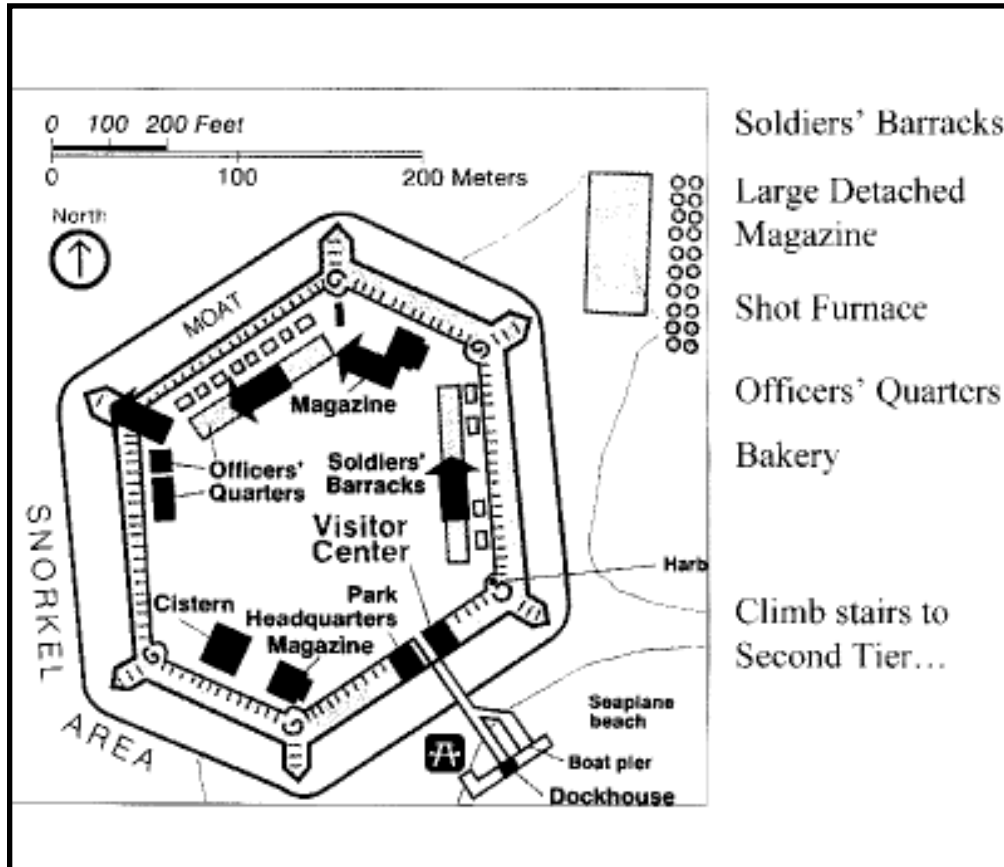
End of Essential Fort Tour

All visitors directed down to first tier
(visitors given option of *Extended Fort Tour*—begins at foot of stairs)

Fort Jefferson Recommended Changes (continued)

* Proposed Route for the 'Extended Fort Tour:'

Below is the general tour route and a few of the wayside exhibits that visitors would see if they took the "Extended Fort Tour" route after completing the "Essential Tour Route."



* Advantages to the Proposed Changes (pages 68-75) at Fort Jefferson:

- Much greater public access to important fort features, with a greater emphasis on daily life and human interest stories
- Much smoother and more logical flow of visitor traffic
- Visitors have option of an "Essential Fort Tour" or an "Extended Fort Tour" with breathtaking views
- Provides larger visitor center and FNPMA sales area

Exhibits (continued):

Florida Keys Visitor Center

* Exhibit Location: to be built inside a 10,000-sf structure on a 2.94-acre parcel along the Truman Waterfront Annex within the U.S. Navy's Old Submarine Boat Basin in Key West, Florida.

* Approximate Size: 6,000 square feet

* Visitors per Year: At least 100,000 (anticipated)

* Background: Within the next few years a number of changes will occur within the tourism environment in Key West that will affect Dry Tortugas NP. A new interagency visitor center is planned in Key West to provide interpretive background for the park, especially on the theme of ecosystems and marine sanctuary issues. In addition, concession contracts will be renegotiated and park access by concession-conveyed (i.e., ferry boats and sea planes) visitors will be reduced or capped, affecting visitation numbers and possibly the audience composition.

The joint agency site is located on a former U.S. Navy Base that has been acquired by the National Oceanographic & Atmospheric Administration (NOAA). The Florida Keys Visitor Center will be housed in a 10,000-square-foot structure, and will consolidate agency information services from Florida Keys National Marine Sanctuary, the U.S. Fish & Wildlife Service, and the National Park Service.

The Florida Keys Visitor Center will inform visitors about the regional environment and promote sensitive ecotourism. The audience will include students, residents, visitors (national, international, Elderhostel, and Cruise Ships), civic/professional organizations, government agencies/staff, business community, and youth groups. The annual visitation is projected to be at least 100,000 visitors.

The exhibit program area will be approximately 6,000 square feet. The visitor experience will include approach and entry (lobby is 800sf, 11,500sf of outdoor spaces), orientation (800sf), visit planning (550sf includes information desk), pre-show exhibits (1,600sf), multimedia show (1,600sf), and summary exhibits (600sf).

Historic Furnishings:

Fort Jefferson

During the CIP workshop in February 2002, potential furnishings installations were discussed for several areas of Fort Jefferson: the guard room and cells adjacent to the sally port (currently park offices), a curtain magazine, a bastion magazine, and the Dr. Mudd cell. Furnishings, or objects provided by the HFC Department of Historic Furnishings, may also be used to enhance exhibits in other areas of the fort, such as an exhibit of a gun on its mount, or vignettes in an expanded museum that would interpret life in the fort in areas no longer extant (the barracks and quarters buildings), or not able to be furnished due to a harsh environment (barracks in casemates).

Prior to beginning any furnishings work, a Historic Furnishings Report (HFR) is necessary. The HFC would be the guide for any refurnishing efforts, and would also help determine whether certain areas could be documented sufficiently to support a furnishings effort. HFRs are useful even for historic spaces where refurnishing is not currently anticipated, since they provide valuable reference material that can be used in interpretive programs and other media. Further, if a space were to become available for furnishings later, the research would already be in place. As a general rule, areas that cannot be documented should not be refurnished except in the form of an exhibit, where a full re-creation of a historic space is not implied. The rooms discussed during the LRIP Workshop are as follows:

Guard Room and Cells: The cells would have been minimally furnished, no doubt, but would require enough lighting for visitors to see inside. The outer area used by the Provost would most likely have had some furnishing and/or equipment, and lighting.

Powder magazines (Curtain magazine on Front 1, aka “Bat Cave”): One curtain magazine and one bastion magazine could potentially be furnished. The bulk of the furnishing would be 80 and/or 100 pound gunpowder barrels, plus any other equipment needed for servicing this area. These spaces would not have been lit, due to danger of explosion, but indirect lighting could be added to allow visitors to see as far into the rooms as necessary. It may be possible to partially furnish the magazines in such a way as to give the impression the whole room is full, without incurring the cost of the complete complement of barrels.

Historic Living Quarters (Tier 2, Front 1): This quarters could contain furnishings that are representative of military life in the 1800s.

Historic Furnishings (continued):

Fort Jefferson (continued)

Mudd Cell: This room is apparently documented by sketches and descriptions penned by Dr. Mudd while being kept here. The floor has shallow depressions in the floor which were dug out by the occupants to drain water off the floor and keep their sleeping areas drier. Later, boards were provided as beds. It may be that research will turn up other items that may have been present (he had access to writing equipment, at least), and if not, even a room with almost nothing in it can carry a powerful interpretive message.

Other areas of Fort Jefferson:

- * Restored gun emplacements with their associated equipment and embrasures/Totten shutters, with the equipment being the "furnishings" that help set and interpret the scene.
- * Exhibits in an expanded visitor center, with original artifacts from the collections being used in context to interpret life within the fort and the stories of the individual cultural groups connected with it.
- * A barracks area within a casemate partially refurnished to interpret military life at one or more periods.

Audiovisual Programs:

Four audiovisual elements are being considered for Dry Tortugas NP: a film for the theater being planned with the (future) interagency Florida Keys Visitor Center in Key West; a short video to be shown on the concession ferry boat monitors; a short video for the audiovisual area within the Fort Jefferson Visitor Center; and an audio tour of Fort Jefferson.

Key West Interagency Visitor Center Theater:

The audiovisual program being planned for the Florida Keys Visitor Center's theater will be a 20- to 25-minute film examining the South Florida Ecosystem, including the Florida Keys, coral reefs, and Gulf Stream. The target audience would be visitors to Key West, many from cruise ships, and others who may not visit the varied, difficult-to-access park resources. The film would serve as a big picture, surrogate experience, addressing a charismatic resource in an inspirational manner.

Concessionaire's Ferry:

The audiovisual program on the ferries would be a short 2- to 5-minute video to be shown by the concessionaire on video monitors on the ferry boats en route to Dry Tortugas NP. The video will include the significance of the park; a brief overview of the two realms of resources, historic and natural; and some treatment of resource protection issues.

There may also be an audio segment offered to ferry passengers that is a part of the park's audio tour (see "Fort Jefferson Tour Route" below). These devices would allow visitors to activate their audio units prior to their arrival in the park, perhaps when Fort Jefferson first becomes visible. It will allow for the reinforcement of messages delivered by the short 2- to 5-minute video (described in the paragraph above), and may prompt visitors to use the units upon arrival in the park.

Fort Jefferson Visitor Center:

Within the audiovisual area of the Fort Jefferson Visitor Center, a 5- to 10- minute video would be shown that emphasizes Fort Jefferson's cultural history but also includes some natural history elements. This video can assist in fulfilling ADA challenges by functioning as a surrogate visit to inaccessible areas, such as the upper levels of the fort.

Fort Jefferson Tour Route:

In lieu of group tours, this audio tour would allow visitors to explore Fort Jefferson at their own pace. The audio tour would emphasize the cultural story of Fort Jefferson (especially its diversity of people) but would include some natural history (and its diversity), blending the two when visitors will be on the top walls and on the moat wall, surrounded by ocean. The audio tour can assist in fulfilling ADA challenges by functioning as a surrogate visit to inaccessible, upper levels of the fort.

Parkwide Interpretive Themes/Media Matrix

1. Nature Themes:

A. The Dry Tortugas lie at the convergence of ocean currents resulting in an area teeming with marine life.

This theme statement includes the following park resources:

Coral reef ecosystem, Seagrass, Fish, Marine invertebrates, Benthic (sea bottom) community, Ocean currents, Pelagic (open sea) life, Water column, Mangroves, Museum collection

B. The geology and isolated location of the islands offer a vital terrestrial habitat that provides refuge for nesting and migrating wildlife species.

This theme statement includes the following park resources:

Turtles, Birds, Vegetation, Geomorphology, Insects, Exotic Rodents

C. The Dry Tortugas is a fragile ecosystem that is influenced by global, regional, and local activities.

This theme statement includes the following park resources:

Coast, Oceanography, Water quality, Weather, Endangered/threatened species (and exotics/pests), Fisheries, Boat Groundings, Marine Laboratory/Research, Night Sky

2. History Themes:

A. Despite isolation, the historic structures in Dry Tortugas National Park resulted from evolving national concerns, international rivalries, and pioneering endeavors.

This theme statement includes the following park resources:

Fort Jefferson, Coaling docks, Carnegie Lab, Artillery, Hospital, Water distillery remains, Dredge spoils, Museum collection

B. Due to its pivotal location and the risks of navigating the Florida Straits, the Dry Tortugas became a focal point for human successes and failures.

This theme statement includes the following park resources:

Loggerhead Light, Lighthouse support structures, Navigational aids, Submerged anchors, Anchorages, Windjammer wreck

C. The voices of Dry Tortugas — reflecting a wide range of individual experiences and cultures — tell of survival, adaptation, struggle, interaction, and accomplishment.

This theme statement includes the following park resources:

Shipwrecks, Museum collection, Graffiti, Dr Mudd's cell, Quarantine remains, Theater, Gardens, trees, Rock wall at L. Key

3. Safety, Orientation, and Resource Protection messages

While not primary themes, these messages are key for all visitors.

Parkwide Interpretive Themes/Media Matrix

<u>Publications</u>	<u>Waysides</u>	<u>Exhibits</u>	<u>Audiovisual</u>	<u>Personal Services</u>
Unigrid folder Site Bulletins S. FL newspaper Self-guiding booklet Dive cards	Snorkel Trail Moat Walk Orient. panels	Key West VC Fort Jeff. VC	Key West film Fort Jeff. video Ferry video	Concess.-led tour NPS nature walks Evening programs Special events
Unigrid folder Site Bulletins S. FL newspaper Dive cards	Moat Walk Garden Key Bush Key Loggerhead Key	Key West VC Fort Jeff. VC Ferry video	Key West film Fort Jeff. video Evening programs	Concess.-led tour NPS nature walks
Unigrid folder Site Bulletins S. FL newspaper Self-guiding b. Dive cards	Snorkel Trail Moat Walk Orient. panels Bush Key	Key West VC Fort Jeff. VC exterior/HistFur (water/cisterns)	Key West film Fort Jeff. video Ferry video	Concess.-led tour NPS nature walks Evening programs
Unigrid folder (chronology) S. FL newspaper Dive cards	Snorkel Trail Moat Walk Orient. panels Fort Jefferson	Key West VC Fort Jeff. VC exterior/HistFur (10" Rodman)	Key West film Fort Jeff. video Fort audiotour	Concess.-led tour NPS Ft. Jeff. tours Evening programs Special events
Unigrid folder Site Bulletins S. FL newspaper Self-guiding booklet Dive cards	Fort Jefferson Orient. panels Windjammer Loggerhead Key	Key West VC Fort Jeff. VC exterior/HistFur (Dr Mudd's cell & guard's cell)	Key West film Fort Jeff. video Fort audiotour	Concess.-led tour NPS Ft. Jeff. tours NPS nature walks Evening programs Special events
Unigrid folder S. FL newspaper Dive cards	Fort Jefferson Orient. panels Loggerhead Key	Key West VC Fort Jeff. VC	Key West film Fort Jeff. video Fort audiotour	Concess.-led tour NPS Ft. Jeff. tours Evening programs Special events
Unigrid folder Site bulletins	Orient. panels Fort Jeff. panels	Key West VC Fort Jeff. VC	Ferry video Fort audiotour	All NPS and conc. personal services

FUTURE PROGRAM: **PARTNERSHIPS**

Existing partnerships:

* Community Partners: This partnership is a coalition of community leaders from South Florida, the National Parks Conservation Association, and the four South Florida national parks (EVER, BISC, BICY, DRTO) who work collaboratively to raise awareness and promote visitation to the parks from various cultural, ethnic, and racial groups. Members of the Community Partners have participated in various planning workshops, including those associated with developing the interpretive program.

* Federal Highways Administration (FHA): FHA annually inspects the Garden Key dock and bridge, which afford the only public access to park lands (without visitors having to wade or swim).

* Florida Keys National Marine Sanctuary (FKNMS): FKNMS, under the National Oceanographic & Atmospheric Administration (NOAA), manages waters contiguous to the park that prohibit consumptive activities. It shares research results with the park, provides support to the park for a variety of issues, including damage assessments from ship groundings and restoration efforts. The proposed Key West Interagency Visitor Center is planned to be located on FKNMS property that will be adjacent to their Regional Office. Everglades NP's Division of Interpretation partners with the FKNMS to fund a television series highlighting issues and activities in our respective areas of concern; many programs relate (or could relate) to Dry Tortugas.

* Florida National Parks & Monuments Association (FNPMA): This cooperating association serves all four South Florida national parks, and operates the bookstore and visitor center at Fort Jefferson. FNPMA provides funding for interpretive programs and a percentage of sales clerk staffing from Aid-to-NPS funds. Sales manager Beryl Given is a former resident of the park and has a wealth of knowledge about the fort from independent research she has conducted at the National Archives.

* Florida Solar Engineering Center: This scientific center has aided the park in installing a photo-voltaic system on Loggerhead Key, which could be the subject of interpretation. They will soon be conducting an energy audit for Garden Key and recommending sustainable applications for utility needs; again, these could be the subject of interpretation.

* Florida State Historic Preservation Office (SHPO): The Florida SHPO approves proposed projects that could impact historic resources at the park. The Florida SHPO has directed Dry Tortugas NP to interpret Fort Jefferson's "Totten shutters" as a component of a stabilization effort removing these iron remnants that are deteriorating the fort's masonry.

Partnerships (continued):

Existing partnerships (continued)

* Florida Water and Wastewater Treatment: This agency oversees water and wastewater systems at the park. Recently they directed the park to remove a public water fountain because it did not meet state standards for drinking water. This agency would have to approve any major changes to utilities that can impact the visitor experience.

* Monroe County Schools: This partnership with the county school system is implemented with the Everglades National Park Division of Interpretation's Environmental Education program. Once a year, park staff travel throughout the Florida Keys to present programs on the Everglades, Dry Tortugas, and the national park system to all fourth grade classes in Monroe County.

* Sea Planes of Key West, Inc. (potential concessionaire): Operates sea plane service between Key West and Garden Key. Visitors may opt for a 2-hour, 4-hour, or all-day stay. No interpretation is offered on site, though the pilot does a "point and name" tour from the air. This could be an effective mechanism to interpret reefs, marine mammals, sea turtles, and shipwrecks, as all these are visible from the air. The park now provides a park newspaper to their clients.

* Sunny Days Catamarans, Inc. and Yankee Whale Watch/The Yankee Fleet (potential concessioner): Incidental Business Permittees who each transport up to 100 passengers daily to the park. They presently offer a guided tour of Fort Jefferson, but do no interpretation related to natural resources. The park provides park newspapers to their passengers.

* U.S. Coast Guard (USCG): The USCG allows the park to berth the park supply ship, M.V. *Fort Jefferson*, on their base in Key West. The USCG maintains navigational aids in and around the park, including the historic Loggerhead Lighthouse. They recently deeded ownership of Loggerhead Key, although they maintain ownership of the lighthouse. The key includes a district that has been nominated to the National Register of Historic Places. They aid with incidents and rescues in the park, and investigate groundings. Also, the Curator of the Coast Guard has the Fresnel lens from the Sand Key Light and might be willing to display it in the Key West Interagency Visitor Center if a facility can be developed to house it on the grounds.

* US Fish & Wildlife Service (F&WS): The F&WS is a partner in the Key West Interagency Visitor Center.

* University of Miami, Rosenstiel School of Marine and Atmospheric Science, and the Florida Marine Research Institute: In partnership with the South Florida Natural Resources Center, this partnership conducts fishery and coral reef research in the park. They also provide current information and results of ongoing research.

Partnerships (continued):

Existing partnerships:

* Biscayne National Park and Virgin Islands National Park: These NPS areas manage and interpret similar resources. Information and ideas are exchanged regularly with these park staffs, perhaps more so with Biscayne NP because of its close proximity.

* Submerged Resources Center (SRC, formerly Submerged Cultural Resources Unit): The SRC has mapped 90% of shallow- water cultural sites in the park. They also maintain an archive of still and moving photographs and excellent maps of shipwrecks, that can serve as the centerpiece for interpretive efforts about these resources.

* Southeast Archeological Center (SEAC): SEAC conducts terrestrial archeological surveys and excavations for the park. They have a repository of existing and developing information about the park story. SEAC is the repository for the storage of archaeological artifacts and associated documentation from Dry Tortugas National Park.

* Historic Preservation Training Center and the Intermountain Conservation Office: The stabilization crews of these programs are preserving historic fabric in the park. This is ongoing, highly visible work that is part of the preservation story of the National Park Service.

* Harpers Ferry Center (HFC): HFC provides technical assistance and project management on a variety of interpretive projects, mostly in developing interpretive media. HFC also is facilitating and writing this Long - Range Interpretive Plan (LRIP).

* South Florida National Parks Trust: Biscayne, Everglades, and Dry Tortugas National Parks have established a friends group through the National Park Foundation. An initial grant has been received, and board members have been selected. Many parks benefit from a relationship with this kind of group, both in terms of expertise that is commonly not found in the government and in opportunities to create innovative funding strategies for projects. Many of the proposed interpretive components will be even more costly than normal due to the remote location of Dry Tortugas and the harsh climate. This group can serve as a voice for the park with new and varied audiences in their efforts to support the South Florida parks.

Partnerships (continued):

Potential partnerships:

* Carnegie Institute: This organization operated the Carnegie Institution Marine Biological Laboratory on Loggerhead Key from 1904 to 1940. Here scientists developed underwater research by using diving helmets, and developed the first use of underwater photography; the first color underwater photograph was taken here in 1917. The park hopes to reestablish a relationship with this organization to highlight their innovative work and to continue their high caliber of research.

* City of Key West, Florida: One component of the plan for the Interagency Visitor Center is a series of signs to direct motorists to the visitor center. This sign plan will need the city's approval. It is also hoped that the city will recognize the facility as a "tourist anchor" where visitors can go to get information on the natural resources in the area. Presently, there is no one place to go in Key West to do this, or even to get an overview of what there is to do in Key West itself.

* Florida State Parks: The Florida State Park system manages Fort Zachary Taylor, another Third System fort, in Key West. Both Fort Taylor and Fort Jefferson share periods of significance and stories. The interpretive programs at both areas could be more effectively linked. The State Parks also manage underwater cultural resources. The park's GMP Amendment, Appendix H, "Submerged Cultural Resources Strategy," calls for the park to develop "...an integrated regional interpretive approach to maritime history as represented by the archeological record within the natural environment of DRTO, Biscayne National Park, the Florida Keys National Marine Sanctuary and Florida parks."

* Incidental Business Permit Holders: The park has 60 permittees who bring parties into park waters to fish, SCUBA dive, snorkel, birdwatch, sail, or photograph. These business operators have a wonderful opportunity to educate their clients. A guide education program (and perhaps a newsletter) offered by DRTO could be an effective tool to broaden park messages to visitors who may not be encountered directly.

* Key West Chamber of Commerce: Approximately 1.4 million people visit the Florida Keys annually, many of whom travel to Key West. The success of the Interagency Visitor Center hinges upon local businesses recognizing it as a venue for tourism. By working with local businesses, we can help spread an education message through their employees.

Partnerships (continued):

Potential partnerships (continued):

* National Underground Railroad Network to Freedom: During construction of Fort Jefferson, the federal government hired enslaved peoples from Key West as part of the construction crew. The park's Historic Structure Report, Historical Data Section, Fort Jefferson: 1846-1898 (1983) provides the following account that can help make the park a participating member in the National Underground Railroad program:

...On July 10 [1847], seven of the slaves fled Garden Key, taking with them virtually everything that could float, thus eliminating the risk of being pursued & captured.

... they were eventually picked up by another vessel, and near Indian Key were ordered back into Axta's small boat and cast adrift. Landing on Indian Key, they were apprehended and brought to Key West.

Upon questioning them, Wright discovered the two ringleaders. They were returned to the owners. The others were returned to Garden Key.

* The Nature Conservancy (TNC), Florida Keys Initiative: TNC, Florida Keys Initiative, is a non-profit conservation organization that preserves land and marine environments in the Florida Keys. This group also partners with the Florida Keys National Marine Sanctuary.

* Ocean Conservancy: Working to conserve and protect the world's oceans, the Ocean Conservancy has named Dry Tortugas as part of a network to protect, through the designation of ocean wilderness, which includes 5% of U.S. waters and key international sites. They have actively participated in public hearings associated with the development of the General Management Plan amendment. This group could help publicize park activities and issues.

* Private Businesses: Businesses throughout the Florida Keys can effectively publicize the Key West Interagency Visitor Center, as well as communicate information and issues related to the park. Their desire to serve the public can help deliver messages to a broader park audience.

* Reef Relief: This nonprofit membership organization is dedicated to preserving and protecting Living Coral Reef Ecosystems through local, regional, and global efforts. Two of the organization's five objectives are a) to increase public awareness of the importance and value of living coral reef ecosystems, and b) to encourage and support eco-tourism as part of sustainable community development that protects and preserves coral reef ecosystems. Both of these objectives are areas of concern for Dry Tortugas National Park, too, and could lead to a partnership.

* Sea Grant Program: This organization's goal is to use academic research, education, and extension to create a sustainable coastal economy and environment.

Partnerships (continued):

Potential partnerships (continued):

* SCUBA Divers: Dry Tortugas National Park offers some of the best and most pristine diving experiences in the United States. Diver education and awareness, as well as support, will be crucial to successful preservation of park resources and implementation of management actions.

* Birders: The park offers some of the best birding in the world. Educating this group of visitors is critical in that many birds are exhausted from their transoceanic journeys; approaching too closely can harm them. Partnering with this group may open doors to educating potential visitors about sensitive park resources and things that they can do to ensure resource preservation.

* Recreational Fishermen: This group was quite vocal in speaking out against the non-consumptive provisions of the new General Management Plan. However, they are regular park users and can aid the park in assessing the health of fish stocks through creel information. Generally representing the local community, they can be strong advocates for the park once they understand the benefits of no-take areas.

* Commercial Fishermen: This group is the most regular user group of park waters. Representatives participated in the establishment of the Florida Keys National Marine Sanctuary, and can also be strong advocates for the benefits of no-take areas once they understand them. They also regularly anchor in the area of Fort Jefferson, and can impact the experience of other visitors. They can be active proponents of park management actions, and a good source of information and ideas because of the amount of time that they spend moving in and out of park waters.

Partnerships (continued):

Potential partnerships (continued):

* Tropical Audubon Society: As a chapter of Audubon of Florida and the National Audubon Society, Tropical Audubon's purposes are 1) conservation: to work toward protection of the natural world and to promote wise stewardship of natural resources, especially native plants and animals and their habitat; 2) education: to promote, among members and the public of all ages, an understanding and appreciation of nature, the environment, and ecological relationships; 3) enjoyment: as a society of members with compatible interests, to enjoy together the study and protection of nature. This organization sponsors an annual trip to the park during bird migration season, and also volunteers from time-to-time in the park. They are also working to heighten awareness of environmental issues and public lands among underrepresented and culturally diverse segments of South Florida's population. This group can help publicize park activities and issues.

* U.S. Navy: The Key West Interagency Visitor Center is to be located on a former submarine base. There is a possibility that the Navy will return to this property, but indications are that they will allow the visitor center to remain. If that is the case, we will be located literally next door to the Navy. Depending upon what kind of facility they install in the area, there will be opportunities to share information and resources.

* Council on America's Military Past and the Coast Defense Study Group: This group is part of a growing network of military history enthusiasts. Many members contribute their time, money, and expertise to help promote the protection and public awareness of coast defense structures. Coastal forts are highly popular. There are currently twelve Third-System forts within the National Park System; dozens of other coastal forts are successfully run by state and local agencies. Parks featuring Third-System forts are the most heavily visited state parks in Maine, North Carolina, Alabama, and Delaware.

* Civil War Round Table: If such a group is ever formed in South Florida, it could provide public involvement in the rich Civil War history of the Florida Keys. Such organizations are normally geared toward scholarship and promoting public awareness in local communities.

FUTURE PROGRAM: LIBRARY NEEDS

The park library is located within a historic powder magazine adjacent to park headquarters at Fort Jefferson. This magazine (known by park staff as the "bat cave") serves as an air-conditioned, multi-use storage area. The library collection occupies 15-linear feet of wall space, within one small section of the 483-square foot "bat cave." The walls and ceiling are composed entirely of soft, 140-year-old brick. As with similar areas inside Fort Jefferson, this area suffers from constant brick and mortar 'fall-out.' Books, shelves, and floors must constantly be cleaned and swept. There are also library areas that leak during heavy rains.

There is no library workspace available in the "bat cave." There are no chairs, tables, or adequate sources of light. Since there are sensitive park items stored within the "bat cave" (and since this area is not staffed), the public generally does not have access to the park library. Therefore, researchers and commercial guides are not able to view the collection.

There are approximately 600 printed materials and more than 100 videocassettes in the library. Subjects focus on park resources: marine research, coral and fish identification, bird identification, historic preservation, Florida history, the Lincoln conspirators, lighthouses, and maritime history. Of special note are such important interpretive materials as Historic Structure Report, Historical Data Section, Fort Jefferson: 1846-1898 (E. Bearss); A Constructional History of Fort Jefferson (A. Manucy); and the Submerged Cultural Resources Assessment (L. Murphy). Valuable papers, stored in the "bat cave" when this LRIP was written, highlight research conducted in the park. These papers should be preserved in the park's museum collection, with copies made available on site to staff on areas such as tern populations research, sea turtle nesting, and the Carnegie Lab on Loggerhead Key.

The library also contains vertical file cabinets. These contain press clippings, historical readings, and various park-related interpretive files. Printed materials are cataloged according to Library of Congress guidelines. Materials can be signed out by park staff, volunteers, or others who are on official park business. Librarian duties have traditionally been handled by FNPMA employees, interpretive staff, or volunteers.

Though the scope and quality of the library materials are currently adequate, the area where they are stored is substandard. Fallout, roaches, termites, and moisture threaten the safety and longevity of these materials. While it is hoped that the collection will continue to grow, the most urgent need is to relocate the collection to a larger, climate-controlled area that is free of fallout. Providing an adequate workspace, preferably within a larger interpretive workspace/office area, would greatly enhance the park's interpretive efforts.

FUTURE PROGRAM: COLLECTION NEEDS

Purpose of the Museum Collection

Although museum objects are sometimes perceived as entities separate from other park resources, they are, in fact, inextricably interwoven. NPS museum collections inform and enhance every aspect of park work, from resource management and interpretation, to research and public accountability (DO-24). Natural and cultural objects and their associated records provide baseline data, serving as scientific and historical documentation of the park's resources and purpose (NPS-28, Chapter 9). Museum objects are acquired, preserved, exhibited and researched to foster understanding and increase knowledge. They are primary sources of cultural and scientific information and must be preserved in perpetuity while safely utilized to the benefit of the general public, interested parties and the scientific community.

The purpose of the Dry Tortugas National Park museum collection is:

- To preserve, document and make accessible historical, archaeological and scientific collections and documentation related to the cultural and natural resources of Dry Tortugas National Park.
- To preserve, document and support scientific research related to the park's cultural and natural resources.
- To increase knowledge and inspiration among present and future generations through exhibits, research and interpretive programs.
- To contribute to the scientific body of data through research, accessibility and dissemination of information.
- To preserve and document the management actions associated with the preservation of the park and its resources.

The park's Scope of Collection Statement (SOCS) is the management document that directs acquisition of museum collections. The interpretive themes, resource management goals and objectives and legal mandates identified in the park's enabling legislation and other laws, General Management Plan, Resource Management Plan and this Long - Range Interpretive Plan serve as guidance for acquiring objects for the museum collection. The development of the museum collection should proceed in close coordination with the park's resource management and interpretation staff, support office curators and other appropriate support office resource management specialists.

Collection Needs (continued):

Existing Collections:

The park's museum collection is divided into two major categories: the cultural collection and the natural history collection. The cultural collection is subdivided into four disciplines: archeology, ethnology, history and archives. Natural history collections are divided into three disciplines: biology, geology and paleontology.

The cultural collection currently consists of approximately 47,000 objects and archival documents. The natural history collection consists of approximately 1,200 biological specimens.

Archaeology

Archaeological artifacts in the museum collection include those recovered from systematic excavations and surface collections by visitors and staff. Systematic recoveries have occurred at shipwreck sites, at the Coast Guard dock ballast site, and through a survey of Loggerhead Key. Shipwreck artifacts include cannons, one of which dates to the 16th century. General types of artifacts in the collection include bottles, lab beakers, submarine cable, fort structural elements (e.g. concrete, window glass, bricks, etc.), ceramic sherds, ammunition, clay pipes and other utilitarian objects.

Ethnology

Ethnographic objects (both period antiques and reproductions) are only designated as such if they were made by a member of the culture in the method and traditions of that identified group. Objects made by individuals outside the cultural tradition are not considered part of the ethnographic collection. Currently there are no ethnographic objects in the park's museum collection.

History

The history collection includes the only Dr. Mudd artifact, a cane he carved while a prisoner at the fort. Several original slide carriages from Fort Jefferson, numerous cannon balls of various sizes, bottles, fort structural elements and pieces of the hot shot furnace are also preserved. (Note: the Civil War artifacts, flank-defense howitzer and shot exhibit in the fort visitor center are not original to Fort Jefferson. These objects, together with the original Fort Jefferson cannons, are currently cataloged to the Everglades National Park museum collection).

Collection Needs (continued):

Existing Collections (continued):

Archives

The museum archives contain associated field records, photographs and archives documenting the construction, use, history and management of the Dry Tortugas. Examples of collections include the Meigs collection of glass plate negatives (1897-1899), 1863 pocket bible that belonged to the Fort Jefferson Chaplain, 1864 Civil War playbill from Fort Jefferson, 1860 diary of J.C. Hill and four albums of pressed marine algae specimens from the mid-1860s. The collection also includes c. 4000 photographic images, spanning over a century. Albert Manucy's research on the constructional history of Fort Jefferson, the Historic Structures Report, dozens of maps and plans, park administrative history, and resource management records complete the bulk of the collection.

Biology

Natural history specimens collected on site and permanently retained must become part of the museum collection. This collection currently includes 474 native and exotic plant specimens, two prepared study skins of Sooty Terns (*Sternus fuscata*) and four eggs from the masked booby (*Sula dactylatra*). There are also 49 reptile specimens (Iguanidae and Gekkonidae), 410 insects (Coleoptera, Hemiptera, Homoptera and Orthoptera), 4 fish specimens, 47 gastropods (*Cerion* sp.) collected on Garden and Loggerhead Keys and 200 sponges (Porifera). There are no mammal or amphibian specimens in the collection. (Note: 112 coral specimens from Dry Tortugas are currently cataloged to the Everglades National Park museum collection).

Geology

There are currently no geological specimens in the museum collection.

Paleontology

There are currently no paleontology specimens in the museum collection.

Collection Needs (continued):

Future Collecting:

The following list (below and on the next two pages) identifies by discipline object types appropriate for the museum collection. The goal is to have a representative collection of cultural and natural history items related to the significant aspects of the park. When considering new acquisitions, the park must determine its capabilities to preserve them according to National Park Service and professional museum standards.

Archaeology

Archaeological materials, except inalienable and communal property (as defined by the Native American Graves and Repatriation Act of 1990 [25 USC 3001-13]), recovered from within park boundaries through systematic collection are National Park Service property and must be retained in the park's museum collection in accordance with 16 U.S.C. 470aa-11, Archeological Resources Protection Act of 1979 (as defined in 43 CFR 7.13) and NPS Management Policies (2001). Associated field data and records must also be maintained as part of the park's museum collection. Artifacts recovered by means other than non-systematic excavations will be considered for museum acquisition on a case-by-case basis.

Ethnology

Original ethnographic objects will comprise a small part of the collection, subject to availability of documentation and appropriate objects. The need for reproduction ethnographic objects in the collection will be determined by exhibit plans for Fort Jefferson, as outlined in a future Historic Furnishing Report.

History and Archives

The limits of the history collection and museum archives will be determined by the existence and availability of original associative material, as well as the reproduction furnishing needs of the fort for future exhibits, as outlined in a future Historic Furnishing Report. Examples of the types of objects appropriate for acquisition include:

- Collections relating to the US Army construction and occupation of Fort Jefferson.
- Collections which belonged to historical figures associated with the fort, if they have direct associations with periods of historic significance at Dry Tortugas National Park.
- Contract records from private companies hired by the military during construction of Fort Jefferson and other structures.
- Collections documenting Civil War events at the fort.

Collection Needs (continued):

Future Collecting (continued):

History (continued)

- Collections documenting the use of Fort Jefferson as a prison.
- Collections that document the construction and operation of the quarantine station and associated structures on Garden and Bird Keys by the Marine-Hospital Services.
- Collections associated with the nine wounded survivors from the battleship Maine brought to the station in February 1898.
- Collections documenting the role of the quarantine station for treatment of infected warships and troop transports during the Spanish-American War and those associated with the US Army use of the Dry Tortugas during the Spanish-American War.
- Collections documenting the construction and operation of the coal-ing docks by the US Navy.
- Collections documenting the Marine guard garrisoned at Fort Jefferson to guard the coal depot.
- Collections documenting occupation, use and research of the Carnegie Institute's Tortugas Marine Laboratory.
- Collections documenting the use of the Dry Tortugas as a seaplane base.
- Collections documenting US Coast Guard management of Loggerhead Key and the light houses on Loggerhead and Garden Keys.
- Collections documenting NPS management activities and park administrative history.
- An example of a Totten shutter and other samples of original fabric and features of historic structures, removed during restoration or stabilization projects.
- Associated records for cultural and natural resource research projects.
- Reproduction furnishings should be acquired to meet specific Fort furnishings needs, following completion of a Historic Furnishing Report and any subsequent revisions to that document.

Most of the official records, correspondence, appropriations information, maps, plans, surveys, constructional history data, etc. created by the US Army, US Navy, US Marines or US Coast Guard is in the possession of the National Archives and Records Administration (NARA) or other Federal agencies. If this material, or previously unknown items, becomes available, it should be included in the museum collection.

Collection Needs (continued):

Future Collecting (continued):

Biology

At a minimum, each species of plant, mammal, bird, fish, reptile, amphibian, insect, coral and other invertebrates in the park should be represented in the museum collection. In many instances this can be done through photographic documentation and still meet the needs of developing a representative museum collection. In other cases, accidental deaths may be harvested for museum specimens, subject to the park's ability to prepare and store the specimens. Taking of live specimens should only be done within a larger research framework, not simply as documentation for the collection. It is expected that additional collecting will occur based on specific research and resource management needs but it is difficult to predict these projects or growth of the museum collection as a result. This additional collecting of specimens for inventory, monitoring and scientific research should be associated with needs identified in the park's Resource Management Plan. All records associated with collected specimens must be maintained as part of the museum collection.

Geology

The minimum number of hand specimens, soil specimens and mineral specimens required to document rock types, formations, soils and minerals found in the park should be collected. All records associated with collected specimens must be maintained as part of the museum collection. Additional specimens may be collected if needed to illustrate variations in structure or composition of units. Collecting of specimens will be associated with needs identified in the park's Resource Management Plan.

Paleontology

There are no plans to develop a paleontology collection at this time, unless previously unknown deposits are discovered. In that event, each species found in the park should be represented by the minimum number of specimens required to fully document the horizontal and stratigraphic range of the species and the various habitats in which each species was fossilized. All records associated with collected specimens must be maintained as part of the museum collection.

FUTURE PROGRAM: RESEARCH NEEDS

Natural Resource Research Needs

Like many national park units, Dry Tortugas NP lacks a complete inventory of its wide-ranging natural resources. Many of the park's species are rare; in some cases, species found in the park are federally listed as "threatened" or "endangered," such as the loggerhead and green sea turtles. The coral formations that occur throughout the 100 square miles of Dry Tortugas NP have yet to be fully discovered, assessed, and documented scientifically. Yet, researchers acknowledge that some coral species occurring in the park are found nowhere else in the Florida Keys and Caribbean. The park lacks current scientific research and knowledge of some natural resources needed to effectively provide the most compelling, high-quality interpretation.

Ideally, sufficient scientific research and studies would be conducted for all the park's marine and terrestrial populations. The following research needs seem to be the most pressing to enable natural resource interpretive program planning and development reach its full potential:

*** Sea Turtle Research**

Additional research on green and loggerhead sea turtle nesting in Dry Tortugas NP is critical to being able to interpret these rare marine species and their particular significance in the park. The park has not yet met the 10 years of minimum baseline research necessary for determining significant trends in the species. An entirely unique species of green sea turtle, a "Dry Tortugas subspecies," is thought to be exclusive to the park; but this possibility has not yet been evaluated. In order to provide higher-quality interpretation and more definitive information to visitors, further sea turtle research in Dry Tortugas NP is crucial.

*** Coral Research**

The park still contains waters that have not been surveyed for coral species, formations, and habitats. Scientists have documented at least 75 species of hard and soft corals in Dry Tortugas NP, some of which are becoming increasingly rare elsewhere. But a huge gap still exists between what corals have been documented in the park and what coral colonies and formations still await discovery. This lack of definitive data hinders interpretive efforts from reaching their full potential.

About 60% of the world's coral reefs are "threatened." This state of the world's reefs further amplifies the need for coral research and studies in the Dry Tortugas, one of the few substantial marine ecosystems still intact. Additional coral research would support interpretive programming that truly provokes park visitors about resources that are globally significant and compelling in this national park.

Research Needs (continued):

Other Significant Natural Resource Research Needs:

Fisheries Independent Abundance Survey

Fisheries Dependent Survey

Grouper family inventory

Patterns in Island Configurations

Benthic Habitat

Video monitoring of percentage of coral cover using Visitor Experience & Resource Protection (VERP)

In situ monitoring of benthic damage, dislodged organisms, and fin marks using VERP

Light Detection and Ranging (LIDAR) mapping flights to map the ocean bottom in the park

Tern Study (This study has been going on for 50 years. The data collected by Dr. Bill Robertson is in the park's museum collection.)

Assessing Spiny Lobster and Queen Conchs (inventory and monitoring)

Evaluation of Community Dynamics at Five Coral Reefs

Water Quality Monitoring

Baseline Study of Non-reef Coastal Pelagic Fish

Research Natural Area (RNA) Implementation: Mooring Buoy Study

Natural Resource Monitoring Needs:

Ongoing assessment of study areas to determine recreational impacts (RNA)

Ongoing Coliphage monitoring (VERP)

Feeding of wildlife (VERP)

Social trails (VERP)

Intrusions of Buffer Zones (VERP)

Exotic pest monitoring

Vascular plants and vertebrates (Inventory and Monitoring Program)

Research Needs (continued):

Cultural Resource Research Needs:

The cultural resources within Dry Tortugas NP have long been recognized as some of the most significant in the National Park System. Two highly respected historians, Al Manucy and Ed Bearss, have completed major studies on the construction history of Fort Jefferson. Larry Murphy and the NPS Submerged Cultural Resources Unit have documented the park's diverse underwater resources. Neil Hurley, an authority on Florida lighthouses, has incorporated much of his original research into a book on the Tortugas lighthouses.

Despite these efforts, some fundamental gaps still exist in our understanding of the park's cultural resources. For example, there is a strong need to learn more about the role of African Americans at Fort Jefferson. For these and other groups (Irish and German workers, women, Cuban fishermen, etc.), little is known about their conditions and day-to-day experiences. Understanding how these groups interacted and co-existed on this small "city on the sea" would greatly enhance the park's interpretive efforts. Future exhibit and media planning will place a much greater emphasis on interpreting human-interest stories. As recent historiography has shown, such stories of daily life can be remarkably compelling, helping to form powerful connections between the modern visitor and the historic resource.

Researching daily life in the Dry Tortugas presents many challenges. Routine activities were rarely well documented. Beryl Given of FNPMA has conducted years of research, attempting to learn more about the people who once worked and lived in the Tortugas. She could be consulted for some of this information. A search of government contracts for employing slaves at the fort could reveal some valuable information. Military unit histories, soldiers' letters and journals, and muster rolls are potential sources of interpretive material.

Though archival research can be expensive and time consuming, the following topics have been identified by staff and visitors as potential areas of additional research:

- * Conditions and experiences of African Americans
- * Women at the fort
- * Daily Life in the Tortugas
- * Muster rolls of soldiers stationed at Fort Jefferson
- * Cuban fishermen
- * Information on burials
- * The types and locations of historic furnishings
- * Information on removal and disposition of fort armament
- * Windjammer and Brick Wrecks - information on sinkings (deaths, causes, etc.)

Research Needs (continued):

Cultural Resource Research Needs (continued):

- * National Quarantine Station
- * Use in Spanish-American War, World War I, World War II, Cold War
- * Additional info on the detached parade magazines
- * Coaling Docks and their use as naval station
- * Pirates
- * Native American (and early Cuban) connections to the Dry Tortugas

Other Cultural Resource Research Needs:

- * Submerged cultural resources
- * mapping
- * survey and identification in waters >10 m.
- * Visitor Experience and Resources Protection Baselines (VERP)
 - indicators and standards for submerged cultural sites
- * Cultural Landscape Inventory and Report
- * Archeological overview and assessments (terrestrial and marine)
- * Historic Structures Report-Loggerhead Key
- * Park Administrative History
- * Historic Furnishings Report
- * Scope of Collections Statement (scheduled for FY 2003)
- * Collections Management Plan (scheduled for FY 2004)
- * Ethnographic Oral Histories and Life Histories

Social Science Research Needs:

The most pronounced need in this category is social science research that ascertains the park's need for providing multilingual interpretive and informational materials. Dry Tortugas NP does not attract "typical" NPS visitors; people travel to the park from throughout the United States and the world seeking a wide range of experiences.

Future Research Needs:

New cultural discoveries are highly possible. Archival research or archaeological work could uncover a variety of unknown topics and issues. One possibility, for example, would be finding evidence of Native American activity in the Tortugas. Further, a systematic inventory of archeological resources and submerged cultural resources in depths greater than 30 meters needs to be done.

FUTURE PROGRAM: STAFFING NEEDS

Current Level (as of FY 2003):

<u>Position Title</u>	<u>Status</u>	<u>Grade</u>	<u>FTE</u>	<u>(Incumbent)</u>
Park Ranger	Permanent	GS-9	1.0	(Mike Ryan)
Park Ranger	Permanent	GS-9	1.0	(vacant)
Chief of Interp. (for both EVER and DRTO)	Permanent	GS-14	0.2	(Cherry Payne)
District Interpreter (EVER Florida Bay District)	Permanent	GS-11	0.2	(David Szymanski)

Positions Needed:

<u>Position Title</u>	<u>Status</u>	<u>Grade</u>	<u>FTE</u>	<u>(Incumbent)</u>
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Note: All positions below will be stationed at the (future) interagency* Florida Keys Visitor Center (FKVC) in Key West, Florida.

FKVC Sup. Pk Ranger	Permanent	GS-11	1.0	(vacant)
FKVC Park Ranger	Permanent	GS-9	1.0	(vacant)
FKVC Park Ranger	Permanent	GS-9	1.0	(vacant)
FKVC Park Ranger	Permanent	GS-9	1.0	(vacant)
FKVC Park Ranger	Permanent	GS-9	1.0	(vacant)

Total New Positions: 5.0 Total FTEs with new position: 7.4

* The (future) interagency Florida Keys Visitor Center in Key West will also be staffed by employees of NOAA and F&WS.

FUTURE PROGRAM: IMPLEMENTATION PLAN

The measure of success of any plan is the extent to which it is implemented. Initial implementation strategies need to be both realistic and flexible. The implementation plan for the Long-Range Interpretive Plan (LRIP) outlined on the following pages is an initial blueprint for change. Because funding opportunities and priorities often change, park managers need to adjust the implementation strategies to adapt to changing conditions. Therefore, this LRIP should be updated annually as Part 6 (Status of Implementation Plan) within the park's Annual Implementation Plan (AIP).

Over the next 10 years, employees in the positions listed below should form an **Implementation Team** to guide the accomplishment of this LRIP's Implementation tasks as outlined on the following pages:

<u>Title</u>	<u>Location</u>
Management Assistant, DRTO	Everglades National Park
Chief of Interpretation, EVER/DRTO	Everglades National Park
Site Supervisor, DRTO	DRTO -- Fort Jefferson
Park Ranger, DRTO	DRTO -- Fort Jefferson
Park Ranger, DRTO	DRTO -- Fort Jefferson
Exhibit Specialist, DRTO	DRTO -- Key West, Florida
Museum Curator, EVER/DRTO	Everglades National Park
Natural Res. Specialist, EVER/DRTO	Everglades NP (Key Largo)
President, FNP&MA (or other partners of Dry Tortugas National Park)	
Chief of Interpretation, SER	SERO -- Atlanta, Georgia
Interpretive Specialist, SER	SERO -- Atlanta, Georgia

The NPS employees filling the above-listed positions should confer annually to devise/adjust the funding strategies and task assignments to ensure the implementation of this Long-Range Interpretive Plan.

PERSONAL SERVICES:

<u>Task(s)/Step(s)</u>	<u>(from page #)</u>	<u>Responsible Position</u>
<u>Interpretive Programs</u>		
Improve Concessionaire Interpretation	(see page 52)	Park Interpreters, DRTO
Audit/Coach Concession-led Fort Tours	(see page 54)	Park Interpreters, DRTO
Provide Accurate Info to Concessionaires	(see page 54)	Park Interpreters, DRTO
Improve Resource Protection Information	(see page 54)	Park Interpreters, DRTO
Include under- represented Interpretive Subjects	(see page 52)	Park Interpreters, DRTO
Expand Evening Interpretive Programs	(see page 52)	Park Interpreters, DRTO
Offer at least one Natural History Program daily	(see page 52)	Park Interpreters, DRTO
Expand Special Event Programs	(see page 56)	Park Interpreters, DRTO
<u>Education Programs</u>		
Develop an Environmental Education Program	(see page 55)	Chief of Interp, EVER/DRTO

NON-PERSONAL SERVICES:

<u>Publications</u>		
Unigrid Brochure (re - design; print more copies)	(see pages 59-60)	HFC-Pubs, EVER/DRTO
Park Newspaper (develop, design, print)	(see page 62)	EVER/DRTO
Site Bulletins: (NPS format; 10 bulletins x 5,000)	(see pages 60-61)	EVER/DRTO;FPNPMA
(revise FNPMA format: 3 bulletins x 10,000)	(see page 61)	FNPMA
Develop Rack Cards for Dry Tortugas NP	(see page 62)	EVER/DRTO, FNPMA
NPS Handbook (for DRTO, EVER, BISC, VIIS)	(see page 60)	HFC-Pubs, EVER/DRTO
Fort Jefferson VC (expanded FNPMA sales area)	(see page 63-64)	EVER/DRTO, FNPMA
Interagency VC (plan & develop new sales area)	(see page 64)	NOAA, F&WS, NPS

Wayside Exhibits

Orientation & Garden Key panels (15)	(see pages 65-66)	HFC-WE, EVER/DRTO
Snorkel Trail waysides (9)	(see page 65)	HFC-WE, EVER/DRTO
Moat Walk waysides (13)	(see pages 65-66)	HFC-WE, EVER/DRTO
Fort Jefferson waysides (23)	(see pages 66-67)	HFC-WE, EVER/DRTO
Loggerhead Key & Windjammer waysides (4)	(see page 67)	HFC-WE, EVER/DRTO

* The estimated costs of the Interpretive “Personal Services” must be calculated and updated annually by the EVER/DRTO Chief of Interpretation and the EVER Administrative staff.

Immediate / Short-term tasks / Mid-term tasks / Long-term tasks

*Fund Source	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
		XXX	(ongoing)							
		XXX	(ongoing)							
		XXX	(ongoing)							
		XXX	(ongoing)							
		XXX	(ongoing)							
			XXX	(ongoing)						
				XXX	(ongoing)					
					XXX	(ongoing)				
ONPS			XXX	(ongoing)						
Line Item (part of HFC-Pubs budget)			XXX	(then reprints)						
Park Funds	XXX	(annual revisions/reprints)								
FNPMA	XXX	(occasional revisions/reprints)								
FNPMA		XXX	(occasional revisions/reprints)							
FNPMA			XXX	XXX						
FNPMA				XXX	XXX	XXX	XXX	XXX	XXX	XXX
NOAA Contract				XXX	XXX					
FNPMA					XXX	XXX				
Fee Demo		XXX	XXX	XXX						
Fee Demo		XXX	XXX	XXX						
Fee Demo					XXX	XXX	XXX			
Fee Demo					XXX	XXX	XXX			
Fee Demo								XXX	XXX	XXX

NON-PERSONAL SERVICES:

<u>Task(s)/Step(s)</u>	<u>(from page #)</u>	<u>Responsible Position</u>
<u>Indoor Exhibits</u>		
Fort Jefferson Visitor Center exhibits	(see pages 68-69)	HFC-EXH, EVER/DRTO
Interagency Visitor Center exhibits	(see page 84)	NPS, NOAA, F&WS
<u>Fort Jefferson Locational Exhibits</u>		
Casemate/Rodman exhibit	(see page 70)	HFC?, EVER/DRTO
Totten Shutters	(see page 70)	HFC?, EVER/DRTO
Bat Cave	(see page 71)	HFC?, EVER/DRTO
Tower Magazine	(see page 72)	HFC?, EVER/DRTO
Guardhouse/Provost Office	(see page 73)	HFC?, EVER/DRTO
24-pounder flank defense howitzer	(see page 73)	HFC?, EVER/DRTO
Mudd Cell	(see page 74)	HFC?, EVER/DRTO
Enlisted Mens/Prisoners Quarters	(see page 74)	HFC?, EVER/DRTO
Cistern	(see page 75)	HFC?, EVER/DRTO
15-inch Rodman	(see page 75)	HFC?, EVER/DRTO
<u>Historic Furnishings</u>		
Historic Furnishings Report for Fort Jefferson	(see page 85)	HFC-HF, EVER/DRTO
Production of Historic Furnishings Plan	(see pages 85-86)	HFC-HF
<u>Audiovisual Programs</u>		
Key West Interagency Visitor Center (22 minutes)	(see page 87)	NPS, NOAA, F&WS
Concessionnaire's Ferry video (2-5 minutes)	(see page 87)	HFC-AV, EVER/DRTO
Fort Jefferson Visitor Center video (5-10 minutes)	(see page 87)	HFC-AV, EVER/DRTO
Fort Jefferson Audio Tour (one hour)	(see page 87)	HFC-AV, EVER/DRTO

* Cost estimates for the media listed on these pages will be provided by Harpers Ferry Center in a separate document; HFC can be contacted at (304) 535-5050 or <http://www.nps.gov/hfc/>

Immediate / Short-term tasks / Mid-term tasks / Long-term tasks

*Fund Source	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Line Item			XXX	XXX	XXX					
_____					XXX	XXX	XXX			
Fee Demo			XXX	XXX	XXX					
Fee Demo			XXX	XXX	XXX					
Fee Demo			XXX	XXX	XXX					
Fee Demo			XXX	XXX	XXX					
Fee Demo			XXX	XXX	XXX					
Fee Demo			XXX	XXX	XXX					
Fee Demo			XXX	XXX	XXX					
Fee Demo			XXX	XXX	XXX					
Fee Demo			XXX	XXX	XXX					
_____						XXX	XXX	XXX		
_____							XXX	XXX	XXX	
Fee Demo/Grant						XXX	XXX			
Fee Demo/Grant			XXX	XXX						
Line Item				XXX	XXX					
Fee Demo		XXX	XXX	XXX						

PLANNING TEAM

National Park Service

Dry Tortugas National Park and Everglades National Park

Bob Howard	Management Assistant, DRTO
Cherry Payne	Chief of Interpretation, EVER/DRTO
Mike Ryan	Park Ranger, DRTO
Erin Kendrick	Park Ranger, DRTO
Alan Scott	Supervisory Park Ranger, EVER
Sonny Bass	Supervisory Wildlife Biologist, EVER
Linda Vanaman	M. V. <i>Fort Jefferson</i> Captain, DRTO
Bill Fay	Concessions Mgmt. Specialist, EVER/DRTO

Harpers Ferry Interpretive Design Center

Jack Spinnler	Interpretive Planner (Team Captain)
Lisa Royse	Exhibit Planner
John Grabowska	Audiovisual Producer
Dick Hoffman	Senior Wayside Exhibit Planner
Betsy Ehrlich	Senior Wayside Exhibit Designer
Ed Zahniser	Publications Editor
Melinda Schmitt	Publications Designer
Megan Kealy	Publications Cartographer
Andy Chamberlain	Historic Furnishings Curator

Southeast Regional Office - Interpretation and Education

Don Wollenhaupt	Regional Chief of Interpretation
John Beck	Interpretive Planner

Other NPS Participants

Brenda Lanzendorf	Bio - Science Technician, Biscayne National Park
Becky Lacome	Training Specialist, Mather Training Center
Rich Helman	Wayside Planner, HFC (former DRTO employee)

Park Partners and Consultants

Cal Singletary	President, Florida National Parks & Mon. Assoc.
Beryl Given	Sales Mgr., Florida National Parks & Mon. Assoc.
Lauri MacLaughlin	Res. Mgr, Florida Keys National Marine Sanctuary
Mary Tagliareni	Educ/Outreach Coordinator, Florida Keys N. M. S.
Allison Austin	State Outreach Coordinator, Audubon of Florida
Ray Arsenault, PhD	Professor of History, University of South Florida
Gene Tinnie	Historian and Community Activist
Russell Reardon	Researcher, Florida Keys Nat'l. Marine Sanctuary

APPENDICES

Special Populations: Programmatic Accessibility Guidelines for Interpretive Media

Harpers Ferry Center
National Park Service

Statement of Purpose

This document is a guide for promoting full access to interpretive media to ensure that people with physical and mental disabilities have access to the same information necessary for safe and meaningful visits to National Parks. Just as the needs and abilities of individuals cannot be reduced to simple statements, it is impossible to construct guidelines for interpretive media that can apply to every situation in every National Park Service (NPS) area.

These guidelines do, however, define a high level of programmatic access which can be met in most NPS situations. They articulate key areas of concern and note generally accepted solutions. Because of the diversity of park resources and the variety of interpretive situations, flexibility and versatility are important.

Each interpretive medium contributes to the total park program. All media have inherent strengths and weaknesses, and it is our intent to capitalize on their strengths and provide alternatives where they are deficient. It should also be understood that any interpretive medium is just one component of the overall park experience. In some instances, especially with regard to learning disabilities, personal services may be the most appropriate and versatile interpretive approach.

In the final analysis, interpretive design is subjective, and dependent on aesthetic considerations as well as the particular characteristics and resources available for a specific program. Success or failure should be evaluated by examining all interpretive offerings of a park. Because of the unique characteristics of each situation, parks should be evaluated on a case by case basis. The goal is to fully comply with NPS policy:

"...To provide the highest level of accessibility possible and feasible for persons with visual, hearing, mobility, and mental impairments, consistent with the obligation to conserve park resources and preserve the quality of the park experience for everyone."

NPS Special Directive 83-3, Accessibility for Disabled Persons

Audiovisual Programs

Audiovisual programs include video, audio, and interactive programs. As a matter of policy, all audiovisual programs produced by the Harpers Ferry Center will include some method of captioning. The approach used will vary according to the conditions of the installation area and the media format used, and will be selected in consultation with park and regional office staffs.

The captioning method will be identified as early as possible in the planning process and will be presented in an integrated setting where possible. To the extent possible, visitors will be offered a choice in viewing captioned or uncaptioned versions, but in situations where a choice is not possible or feasible, a captioned version of all programs will be made available. Park management will decide on the most appropriate operational approach for each particular site.

Guidelines Affecting Visitors with Mobility Impairments

1. Theater, auditorium, or viewing area should be free of architectural barriers, or alternative accommodations will be provided. UFAS 4.1.
2. Wheelchair locations will be provided according to ratios outlined in UFAS 4.1.2(18a).
3. Viewing heights and angles will be favorable for those in designated wheelchair locations.
4. In designing video or interactive components, control mechanisms will be placed in accessible location, usually between 9" and 48" from the ground and no more than 24" deep.

Guidelines Affecting Visitors with Visual Impairments

1. Simultaneous audio description will be considered for installations where the equipment can be properly installed and maintained.

Guidelines Affecting Visitors with Hearing Impairments

1. All audiovisual programs will be produced with appropriate captions.
2. Copies of scripts will be provided to the parks as standard procedure.
3. Audio amplification and listening systems will be provided in accordance with UFAS 4.1.2(18b).

Guidelines Affecting Visitors with Learning Impairments

1. Unnecessarily complex and confusing concepts will be avoided.
2. Graphic elements will be chosen to communicate without reliance on the verbal component.
3. Narration will be concise and free of unnecessary jargon and technical information.

Exhibits

Numerous factors affect the design of exhibits, reflecting the unique circumstances of the specific space and the nature of the materials to be interpreted. It is clear that thoughtful, sensitive design can go a long way in producing exhibits that can be enjoyed by a broad range of people. Yet, because of the diversity of situations encountered, it is impossible to articulate guidelines that can be applied universally.

In some situations, the exhibit designer has little or no control over the space. Often exhibits are placed in areas ill suited for that purpose, they may incorporate large or unyielding specimens, they may incorporate sensitive artifacts which require special environmental controls, or they may be within certain room decor or architectural features that dictate certain solutions. All in all, exhibit design is an art which defies simple description. However, one central concern is to communicate the message to the largest audience possible. Every reasonable effort will be made to eliminate any factors limiting communication through physical modification or by providing an alternate means of communication.

Guidelines Affecting Visitors with Mobility Impairments

The Americans with Disabilities Act Accessibility Guidelines (ADAAG) is the standard followed by the National Park Service and is therefore the basis for the accessibility standards for exhibits, where applicable.

1. Height/position of labels: Body copy on vertical exhibit walls should be placed at between 36" and 60" from the floor.
2. Artifact Cases:
 - a. Maximum height of floor of artifact case display area shall be no higher than 30" from the floor of the room. This includes vitrines that are recessed into an exhibit wall.
 - b. Artifact labels should be placed so as to be visible to a person within a 43" to 51" eye level. This includes mounting labels within the case at an angle to maximize its visibility to all viewers.
3. Touchable Exhibits: Touchable exhibits positioned horizontally should be placed no higher than 30" from the floor. Also, if the exhibit is approachable only on one side, it should be no deeper than 31".
4. Railings/barriers: Railings around any horizontal model or exhibit element shall have a maximum height of 36" from the floor.
5. Information desks: Information desks and sales counters shall include a section made to accommodate both a visitor in a wheelchair and an employee in a wheelchair working on the other side. A section of the desk/counter shall have the following dimensions:
 - a. Height from the floor to the top: 28 to 34 inches. (ADAAG 4.32.4)

Exhibits (continued)

Guidelines Affecting Visitors with Mobility Impairments (cont.)

b. Minimum knee clearance space: 27" high, 30" wide, and 19" deep of clearance underneath is the minimum space required under ADAAG 4.32.3, but a space 30" high, 36" wide and 24" deep is recommended.

c. Width of top surface of section: at least 36 inches. Additional space must be provided for any equipment such as a cash register.

d. Area underneath desk: Since both sides of the desk may have to accommodate a wheelchair, this area should be open all the way through to the other side. In addition, there should be no sharp or abrasive surfaces underneath the desk. The floor space behind the counter shall be free of obstructions.

6. Circulation Space:

a. Passageways through exhibits shall be at least 36" wide.

b. If an exhibit passageway reaches a dead-end, an area 60" by 78" should be provided at the end for turning around.

c. Objects projecting from walls with their leading edges between 27" and 80" above the floor shall protrude no more than 4" in passageways or aisles. Objects projecting from walls with their leading edges at or below 27" above the floor can protrude any amount.

d. Freestanding objects mounted on posts or pylons may overhang a maximum of 12" from 27" to 80" above the floor. (ADAAG 4.4.1)

e. Protruding objects shall not reduce the clear width of an accessible route to less than the minimum required amount. (ADAAG 4.4.1)

f. Passageways or other circulation spaces shall have a minimum clear head room of 80". For example, signage hanging from the ceiling must have at least 80" from the floor to the sign's bottom edge. (ADAAG 4.4.2)

7. Floors:

a. Floors and ramps shall be stable, level, firm and slip-resistant.

b. Changes in level between 1/4" and 1/2" shall be beveled with a slope no greater than 1:2. Changes in level greater than 1/2" shall be accomplished by means of a ramp that complies with ADAAG 4.7 or 4.8. (ADAAG 4.5.2)

c. Carpet in exhibit areas shall comply with ADAAG 4.5.3 for pile height, texture, pad thickness, and trim.

8. Seating - Interactive Stations/Work Areas: The minimum knee space underneath a work desk is 27" high, 30" wide and 19" deep, with a clear floor space of at least 30" by 30" in front. The desk top or work surface shall be between 28" and 34" from the floor. (ADAAG 4.32 Fig.45)

Exhibits (continued)

Guidelines Affecting Visitors with Visual Impairments

1. Tactile models and other touchable exhibit items should be used whenever possible. Examples of touchable exhibit elements include relief maps, scale models, raised images of simple graphics, reproduction objects, and replaceable objects (such as natural history or geological specimens, cultural history items, etc.).
2. Typography - Readability of exhibit labels by visitors with various degrees of visual impairment shall be maximized by using the following guidelines:
 - a. Type size - No type in the exhibit shall be smaller than 24 point.
 - b. Typeface - The most readable typefaces should be used whenever possible, particularly for body copy. They are: Times Roman, Palatino, Century, Helvetica and Universe.
 - c. Styles, Spacing - Text set in both caps and lower case is easier to read than all caps. Choose letter spacing and word spacing for maximum readability. Avoid too much italic type.
 - d. Line Length - Limit the line length for body copy to no more than 45 to 50 characters per line.
 - e. Amount of Text - Each unit of body copy should have a maximum of 45-60 words.
 - f. Margins - Flush left, ragged right margins are easiest to read.
3. Color:
 - a. Type/Background Contrast - Percentage of contrast between the type and the background should be a minimum of 70% .
 - b. Red/Green - Do not use red on green or green on red as the type/background color combination.
 - c. Do not place body copy on top of graphic images that impair readability.
4. Samples: During the design process, it is recommended that samples be made for review of all size, typeface and color combinations for labels in that exhibit.
5. Exhibit Lighting:
 - a. All labels shall receive sufficient, even light for good readability. Exhibit text in areas where light levels have been reduced for conservation purposes should have a minimum of 10 footcandles of illumination.
 - b. Harsh reflections and glare should be avoided.
 - c. The lighting system shall be flexible enough to allow adjustments.

Exhibits (continued)

Guidelines Affecting Visitors with Visual Impairments (continued)

d. Transitions between the floor and walls, columns, or other structures should be made clearly visible. Finishes for vertical surfaces should contrast clearly with the floor finish. Floor circulation routes should have a minimum of 10 footcandles of illumination.

6. Signage: When permanent building signage is required as a part of an exhibit project, the ADAAG guidelines shall be consulted. Signs, which designate permanent rooms and spaces, shall comply with ADAAG 4.30.1, 4.30.4, 4.30.5, and 4.30.6. Other signs, which provide direction to or information about functional spaces of the building, shall comply with ADAAG 4.30.1, 4.30.2, 4.30.3, and 4.30.5. Note: When the International Symbol of Accessibility (wheelchair symbol) is used, the word "Handicapped" shall not be used beneath the symbol. Instead, use the word "Accessible".

Guidelines Affecting Visitors with Hearing Impairments

1. Information presented via audio formats will be duplicated in a visual medium, such as in the exhibit label copy or by captioning. All video programs incorporated into the exhibit, which contain audio, shall be open captioned.
2. Amplification systems and volume controls should be incorporated with audio equipment used individually by the visitor, such as handsets.
3. Information desks shall allow for Telecommunication Devices for the Deaf (TDD) equipment.

Guidelines Affecting Visitors with Learning Impairments

1. The exhibits will present the main interpretive themes on a variety of levels of complexity, so people with varying abilities and interests can understand them.
2. The exhibits should avoid unnecessarily complex and confusing topics, technical terms, and unfamiliar expressions. Pronunciation aids should be provided where appropriate.
3. Graphic elements shall be used to communicate non-verbally.
4. The exhibits shall be a multi-sensory experience. Techniques to maximize the number of senses used in the exhibits should be encouraged.
5. Exhibit design shall use color and other creative approaches to facilitate comprehension of maps by visitors with directional impairments.

Historic Furnishings

Historically refurbished rooms offer the public a unique interpretive experience by placing visitors within historic spaces. Surrounded by historic artifacts visitors can feel the spaces "come alive" and relate more directly to the historic events or personalities commemorated by the park.

Accessibility is problematical in many NPS furnished sites because of the very nature of historic architecture. Buildings were erected with a functional point of view that is many times at odds with our modern views of accessibility.

The approach used to convey the experience of historically furnished spaces will vary from site to site. The goals, however, will remain the same: to give the public as rich an interpretive experience as possible given the nature of the structure.

Guidelines Affecting Visitors with Mobility Impairments

1. The exhibit space should be free of architectural barriers or a method of alternate accommodation should be provided, such as slide programs, videotaped tours, visual aids, and dioramas.
2. All pathways, aisles, and clearances shall (when possible) meet standards set forth in UFAS 4.3 to provide adequate clearance for wheelchair routes.
3. Ramps shall be as gradual as possible and not exceed a 1" rise in 12" run, and conform to UFAS 4.8.
4. Railings and room barriers will be constructed in such a way as to provide unobstructed viewing by persons in wheelchairs.
5. In the planning and design process, furnishing inaccessible areas, such as upper floors of historic buildings, will be discouraged unless essential for interpretation.
6. Lighting will be designed to reduce glare or reflections when viewed from a wheelchair.
7. Alternative methods of interpretation, such as audiovisual programs, audio description, photo albums, and personal services will be used in areas which present difficulty for visitors with physical impairments.

Guidelines Affecting Visitors with Visual Impairments

1. Exhibit typefaces will be selected for readability and legibility, and conform to good industry practice.
2. Audio description will be used to describe furnished rooms, where appropriate.

Historic Furnishings (continued)

Guidelines Affecting Visitors with Visual Impairments

3. Windows will be treated with film to provide balanced light levels and minimize glare.
4. Where appropriate, visitor- controlled rheostat-type lighting will be provided to augment general room lighting.
5. Where appropriate and when proper clearance has been approved, surplus artifacts or reproductions will be utilized as "hands-on" tactile interpretive devices.

Guidelines Affecting Visitors with Hearing Impairments

1. Information about room interiors will be presented in a visual medium such as exhibit copy, text, pamphlets, etc.
2. Captions will be provided for all audiovisual programs relating to historic furnishings.

Guidelines Affecting the Visitors with Learning Impairments

1. Where appropriate, hands-on participatory elements geared to the level of visitor capabilities will be used.
2. Living history activities and demonstrations, which utilize the physical space as a method of providing multi-sensory experiences, will be encouraged.

Publications

A variety of publications are offered to visitors, ranging from park folders, which provide an overview and orientation to a park, to more comprehensive handbooks. Each park folder should give a brief description of services available to visitors with disabilities, list significant barriers, and note the existence of TDD phone numbers, if available.

In addition, informal site bulletins are often produced to provide more specialized information about a specific site or topic. It is recommended that each park produce an easily updatable "Accessibility Site Bulletin" which could include detailed information about the specific programs, services, and opportunities available for visitors with disabilities and to describe barriers which are present in the park. A template for this site bulletin will be on the HFC Department of Publications website for parks to create with ease, a consistent look throughout the park service. These bulletins should be in large type, 16 points minimum, and follow the large - print criteria on the next page.

Publications (continued)

Guidelines Affecting Visitors with Mobility Impairments

1. Park folders, site bulletins, and sales literature will be distributed from accessible locations and heights.
2. Park folders and Accessibility Site Bulletins should endeavor to carry information on the accessibility of buildings, trails, and programs by visitors with disabilities.

Guidelines Affecting Visitors with Visual Impairments

1. Publications for the general public:

a. Text

- (1) Size: the largest type size appropriate for the format. (preferred main body of text should be 10 point)
- (2) Leading should be at least 20% greater than the font size used.
- (3) Proportional letterspacing
- (4) Main body of text set in caps and lower case.
- (5) Margins are flush left and ragged right
- (6) Little or no hyphenation is used at ends of lines.
- (7) Ink coverage is dense
- (8) Underlining does not connect with the letters being underlined.
- (9) Contrast of typeface and illustrations to background is high (70% contrast is recommended)
- (10) Photographs have a wide range of gray scale variation.
- (11) Line drawings or floor plans are clear and bold, with limited detail and minimum 8 point type.
- (12) No extreme extended or compressed typefaces for main text.
- (13) Reversal type should be minimum of 11 point medium or bold sans serif type.

b. The paper:

- (1) Surface preferred is a matte finish; dull-coated stock is acceptable.
- (2) Has sufficient weight to avoid "show-through" on pages printed on both sides.

2. Large-print version publications:

a. Text

- (1) Size: minimum 16 point type.
- (2) Leading is 16 on 20 point type.

Publications (continued)

Guidelines Affecting Visitors with Visual Impairments (continued)

2. Large - print version publications:

a. Text

- (3) Proportional letterspacing
- (4) Main body of text set in caps and lower case.
- (5) Margins are flush left and ragged right.
- (6) Little or no hyphenation is used at ends of lines.
- (7) Ink coverage is dense.
- (8) Underlining does not connect with the letters being underlined.
- (9) Contrast of typeface and illustrations to background is high (70% contrast is recommended)
- (10) Photographs have a wide range of gray scale variation.
- (11) Line drawings or floor plans are clear and bold, with limited detail and minimum 14 point type.
- (12) No extreme extended or compressed typefaces for main text.
- (13) Sans-serif or simple-serif typeface
- (14) No oblique or italic typefaces
- (15) Maximum of 50 characters (average) per line.
- (16) No type is printed over other designs.
- (17) Document has a flexible binding, preferably one that allows the publication to lie flat.
- (18) Gutter margins are a minimum of 22mm; outside margin smaller but not less than 13mm.

b. Paper:

- (1) Surface is off- white or natural with matte finish.
- (2) Has sufficient weight to avoid "show- through" on pages printed on both sides.

3. Maps:

- a. The less cluttered the map, the more visitors that can use it.
- b. The ultimate is one map that is large - print and tactile.
- c. Raised line/tactile maps are something that could be developed in future, using our present digital files and a thermaform machine. Lines are distinguished by lineweight, color and height. Areas are distinguished by color, height, and texture.

Publications (continued)

Guidelines Affecting Visitors with Visual Impairments (continued)

3. Maps (continued)

- d. The digital maps are on an accessible web site.
 - e. Same paper guides as above.
 - f. Contrast of typeface background is high. (at least 70% contrast is recommended)
 - g. Proportional letterspacing
 - h. Labels set in caps and lower case
 - i. Map notes are flush left and ragged right.
 - j. Little or no hyphenation is used at ends of lines.
 - k. No extreme extended or compressed typefaces used for main text.
 - l. Sans-serif or simple-serif typeface.
4. The text contained in the park folder should also be available on audiocassette, CD, and accessible web site. Handbooks, accessibility guides, and other publications should be recorded where possible.
5. The official park publication is available in a word processing format. This could be translated into Braille as needed.

Guidelines Affecting Visitors with Hearing Impairments

Park site bulletins will note the availability of such special services as sign language interpretation and captioned programs.

Guidelines Affecting Visitors with Learning Impairments

1. The park site bulletin should list any special services available to these visitors.
2. Publications:
- a. Use language that appropriately describes persons with disabilities.
 - b. Topics will be specific and of general interest. Unnecessary complexity will be avoided.
 - c. Whenever possible, easy to understand graphics will be used to convey ideas, rather than text alone.
 - d. Unfamiliar expressions, technical terms, and jargon will be avoided. Pronunciation aids and definitions will be provided where needed.
 - e. Text will be concise and free of long paragraphs and wordy language.

Wayside Exhibits

Wayside exhibits, which include outdoor interpretive exhibits and signs, orientation shelter exhibits, trailhead exhibits, and bulletin boards, offer special advantages to visitors with disabilities. The liberal use of photographs, artwork, diagrams, and maps, combined with highly readable type, make wayside exhibits an excellent medium for visitors with hearing and learning impairments. For visitors with sight impairments, waysides offer large type and high legibility.

Although a limited number of NPS wayside exhibits will always be inaccessible to visitors with mobility impairments, the great majority are placed at accessible pullouts, viewpoints, parking areas, and trailheads.

The NPS accessibility guidelines for wayside exhibits help insure a standard of quality that will be appreciated by all visitors. Nearly everyone benefits from high quality graphics, readable type, comfortable base designs, accessible locations, hard-surfaced exhibit pads, and well-landscaped exhibit sites.

While waysides are valuable on-site "interpreters," it should be remembered that the park resources themselves are the primary things visitors come to experience. Good waysides focus attention on the features they interpret, and not on themselves. A wayside exhibit is only one of the many interpretive tools which visitors can use to enhance their appreciation of a park.

Guidelines Affecting Visitors with Mobility Impairments

1. Wayside exhibits will be installed at accessible locations whenever possible.
2. Wayside exhibits will be installed at heights and angles favorable for viewing by most visitors including those in wheelchairs. For standard NPS low-profile units the recommended height is 30 inches from the bottom edge of the exhibit panel to the finished grade; for vertical exhibits the height of 6-28 inches.
3. Trailhead exhibits will include information on trail conditions which affect accessibility.
4. Wayside exhibit sites will have level, hard surfaced exhibit pads.
5. Exhibit sites will offer clear, unrestricted views of park features described in exhibits.

Guidelines Affecting Visitors with Visual Impairments

1. Exhibit type will be as legible and readable as possible.
2. Panel colors will be selected to reduce eyestrain and glare, and to provide excellent readability under field conditions. White should not be used as a background color.

Wayside Exhibits (continued)

Guidelines Affecting Visitors with Visual Impairments (continued)

3. Selected wayside exhibits may incorporate audio stations or tactile elements such as models, texture blocks, and relief maps.
4. For all major features interpreted by wayside exhibits, the park should offer non -visual interpretation covering the same subject matter. Examples include cassette tape tours, radio messages, and ranger talks.
5. Appropriate tactile cues should be provided to help visually impaired visitors locate exhibits.

Guidelines Affecting Visitors with Hearing Impairments

1. Wayside exhibits will communicate visually, and will rely heavily on graphics to interpret park resources.
2. Essential information included in audio station messages will be duplicated in written form, either as part of the exhibit text or with printed material.

Guidelines Affecting Visitors with Learning Impairments

1. Topics for wayside exhibits will be specific and of general interest. Unnecessary complexity will be avoided.
2. Whenever possible, easy-to-understand graphics will be used to convey ideas, rather than text alone.
3. Unfamiliar expressions, technical terms, and jargon will be avoided. Pronunciation aids and definitions will be provided where needed.
4. Text will be concise and free of long paragraphs and wordy language.

Dry Tortugas National Park Reading List

Marine Resources/Habitat

Walking the Seawall, (Brochure, Dry Tortugas NP), FNPMA. An illustrated orientation to the array of marine organisms that inhabit the waters along the moat wall. A handy guide for the beginning interpreter and a mainstay for visitor use.

General Management Plan, Dry Tortugas National Park, 2001, Affected Environment, Natural Resources, 2001. (pages 101-115) A concise overview of the significant marine and terrestrial resources of the Dry Tortugas. Here, lists of coral and fish species and a distribution of marine habitats found in Dry Tortugas NP may be found. The GMP also contains the park's enabling legislation that necessitates marine and natural resource interpretation in Dry Tortugas NP (pg 423).

Scientific Studies on Dry Tortugas National Park: An Annotated Bibliography, 1997. A comprehensive listing of research and scientific papers regarding the park's natural resources, through 1997. (A more recent version may be available.)

The Florida Keys: The Natural Wonders of an Island Paradise, Jeff Ripple, 1995. This book provides the interpreter with a "big picture" of the South Florida ecosystem. Dry Tortugas NP and its array of marine habitats do not exist in a vacuum. As explained here, they are interwoven with the environments, like the mangrove stands of South Florida.

The Enchanted Braid: Coming to Terms with Nature on the Coral Reef, Osha Gray Davidson, 1998. While this book does not pertain specifically to Dry Tortugas NP, it provides a compelling overview of the coral reef ecosystem, and the variety of biological and other relationships needed to sustain such a diverse community. Many significant interpretive topics, such as those found in this LRIP, are addressed, including: "coral as a diverse habitat," "submerged habitats, like hard bottom and sea grass meadows," and "coral as a planetary barometer."

Sea Turtles

Dry Tortugas National Park Sea Turtle Monitoring Program, Mansfield, Reardon, 1997. The only park-sponsored research and guide to sea turtles in the Dry Tortugas. This manual is invaluable for informing interpreters of the significance of the Park for sea turtle nesting, and explains the basis for conducting such research in the park. Important sea turtle biology, including the nesting process, is explained.

The Loggerhead Turtle in the Eastern Gulf of Mexico, Charles R. LeBuff, Jr. It is believed that Dry Tortugas NP supports the greatest loggerhead rookery in the Florida Keys. This book provides significant biological and ecological explanations, as well as substantiating the need for sea turtle conservation.

Terrestrial Resource

Various Dry Tortugas Sooty Tern write-ups and studies by Dr. Bill Robertson, including:

The Terns of the Dry Tortugas, (Bulletin of the Florida State Museum, Biological Sciences, Vol. 8, Number 1), William B. Robertson, Jr., 1964.

Species of Special Concern, Brown Noddy, Wm. B. Robertson, Jr., 1964.

Species of Special Concern, Sooty Tern, William B. Robertson, Jr., 1964.

Transatlantic Migration of Juvenile Sooty Terns, William B. Robertson, Jr., 1969. These reports provide critical research on the sooty tern, a pelagic sea bird which finds its only U.S. nesting grounds in the Dry Tortugas.

Plants of Dry Tortugas National Park, An Annotated List, March 1999, Richard Reimus, William B. Robertson, Jr. A comprehensive listing of the plants of Dry Tortugas NP. Information regarding a plant's origin, location and native or non-native status is provided.

In addition to the above-mentioned titles, a Dry Tortugas NP interpreter's library should include a variety of identification books and guides relevant to marine and terrestrial species and habitats.

Historical Relationships between People and the Dry Tortugas Physical Environment

From the start, human activity in the Dry Tortugas has been largely dependent upon and almost dictated by the surrounding islands and waters of the physical area. It's difficult to draw a line between the historical resources of the Dry Tortugas and its prevailing natural resources and phenomenon. Therefore, accounts in which these two worlds blend are significant and worthy of interpreting.

The Journal of Emily Holder. A first-person account of a woman's life and her community at Fort Jefferson during the Civil War. Holder also documents how people of this period connected with their environment. Holder's journals vividly tell stories of men, women, soldiers, and civilians interacting with the Dry Tortugas varied natural resources.

Carnegie Institution of Washington's Tortugas Laboratory Papers, Volumes 1-35. (Volumes 3 and 34 at Dry Tortugas NP; others exist at Everglades NP). This renowned institution supported a marine laboratory on Loggerhead Key from 1904 to 1939. Work done by the Carnegie Tortugas Laboratory was considered cutting-edge in the marine research arena, including the first-ever underwater color photos.

Additionally, many of the research papers listed in the *Scientific Studies On Dry Tortugas National Park: An Annotated Bibliography* would greatly enhance interpretive programming at Dry Tortugas NP. Coordinating interpreters' access to on-going Park research and studies is a critical component of an informed and effective interpretive staff.

